

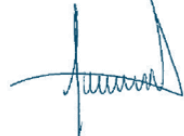
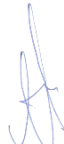
# Hydrocarbon Exploration Program - Exploration Well Asopus-1a In Block 2 – Ionian Sea

ECF3008

Environmental And Social Impact Assessment (ESIA)

Date:07.08.2026

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| PROJECT                   | HYDROCARBON EXPLORATION PROGRAM - EXPLORATION WELL ASOPUS-1A IN BLOCK 2 – IONIAN SEA<br>ECF3008                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
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| CONSULTANT/<br>COMPANY    | LDK Consultants / RSK International Projects Group                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| PREPARED BY               | LDK Consultants / RSK International Projects Group                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| CHECKED BY                | LDK Consultants / RSK International Projects Group                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| APPROVED BY               | <div> <div>Costis NICOLOPOULOS,<br/>Head of Environment and Water<br/>Department, LDK</div> <div>  <div>07.08.2026</div> </div> </div> <div> <div>LDK CONSULTANTS A.E.</div> <div>ΠΑΡΑΔΟΣΙΣ ΘΗΒΑΪΔΟΣ 21 - ΚΗΦΙΣΙΑ - Τ.Κ. 145 64</div> <div>ΤΗΛ. 210 8196700</div> <div>Α.Φ.Μ. 094061957 - ΔΟΥ: Φ.Α.Ε. ΑΘΗΝΩΝ</div> <div>ΑΡ. ΓΕΜΗ : 324501000</div> </div>                                                                                                                                                                                             |
| PROJECT<br>REPRESENTATIVE | <div> <div>Panagiotis KARATOKIS,<br/>Head of HSE, Energean Greece</div> <div>  <div>07.08.2026</div> </div> </div> <div> <div>Angelos MASTRANTONIS,<br/>Legal Representative, Energean Greece</div> <div>  <div> <div>ENERGEAN HELLAS LTD</div> <div>ΕΛΛΗΝΙΚΟ ΥΠΟΚΑΤΑΣΤΗΜΑ</div> <div>Λ. ΚΗΦΙΣΙΑΣ 32 - ΜΑΡΟΥΣΙ 15126</div> <div>ΤΗΛ. 210 47 74 200</div> <div>ΑΡ. Γ.Ε.ΜΗ: 156216601001</div> <div>ΑΦΜ: 999687061 - ΔΟΥ: ΚΕΦΟΔΕ ΑΤΤΙΚΗΣ</div> </div> </div> </div> |

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## LIST OF ABBREVIATIONS

| ABBREVIATION | EXPLANATION                                                                                                 |
|--------------|-------------------------------------------------------------------------------------------------------------|
| 2D           | Two-Dimensional                                                                                             |
| 3D           | Three-Dimensional                                                                                           |
| AA           | Appropriate Assessment                                                                                      |
| ACAP         | Agreement on the Conservation of Albatrosses and Petrels                                                    |
| ACCOBAMS     | Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area |
| ADCP         | Acoustic Doppler Current Profiler                                                                           |
| ADMIE/IPTO   | Independent Power Transmission Operator                                                                     |
| AEWA         | Agreement on the Conservation of African-Eurasian Migratory Waterbirds                                      |
| AIS          | Automatic Identification System                                                                             |
| ALARP        | As Low As Reasonably Practicable                                                                            |
| AoI          | Area of Interest                                                                                            |
| APA          | Awards in Predefined Areas                                                                                  |
| APSFRR       | Area of Potential Significant Flood Risk                                                                    |
| ARPA         | Automatic Radar Plotting Aid                                                                                |
| ASCOBANS     | Agreement on the Conservation of Small Cetaceans of the Baltic, North-East Atlantic, Irish and North Seas   |
| ATLAFCO      | Ministerial Conference on Fisheries Cooperation Among African States Bordering the Atlantic Ocean           |
| AUV          | Autonomous Underwater Vehicle                                                                               |
| BAT          | Best Available Techniques                                                                                   |
| Bcm          | Billion Cubic Meters                                                                                        |
| BEP          | Best Environmental Practice                                                                                 |
| BOP          | Blow Out Preventer                                                                                          |
| BRMA         | Best Risk Management Approach                                                                               |
| BWM          | Ballast Water Management                                                                                    |
| BWMS         | Ballast Water Management System                                                                             |
| CBD          | Convention on Biological Diversity                                                                          |
| CCH          | Critical Cetacean Habitat                                                                                   |
| CCHs         | Cetacean Critical Habitats                                                                                  |
| CCR          | Central Control Room                                                                                        |
| CCS          | Carbon Capture and Storage                                                                                  |
| CDM          | Cuttings Dispersion Modelling                                                                               |
| CFU          | Corfu International Airport – IATA airport code                                                             |
| CHARM        | Chemical Hazard Assessment and Risk Management                                                              |

| ABBREVIATION | EXPLANATION                                                                                                                             |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| CHMP         | Cultural Heritage Management Plan                                                                                                       |
| CHP          | High-Efficiency Combined Heat and Power                                                                                                 |
| CIHEAM       | Centre International de Hautes Etudes Agronomiques Méditerranéennes / International Centre for Advanced Mediterranean Agronomic Studies |
| CLC          | Civil Liability Convention (Διεθνής Σύμβαση περί Αστικής Ευθύνης)                                                                       |
| CMP          | Chemical Management Plan                                                                                                                |
| CMS          | Convention on Migratory Species                                                                                                         |
| COLREGS      | Collision Regulations                                                                                                                   |
| COP          | Conference of Parties (Διάσκεψη των Μερών)                                                                                              |
| CTD          | Conductivity, Temperature, Depth                                                                                                        |
| CUP          | Chemical Use Plan                                                                                                                       |
| DCM          | Deep Chlorophyll Maximum                                                                                                                |
| DIPA         | Department of Environmental Permitting                                                                                                  |
| DM           | Dynamic Positioning                                                                                                                     |
| DNV          | Det Norske Veritas                                                                                                                      |
| DO           | Dissolved Oxygen                                                                                                                        |
| E&P          | Exploration and Production                                                                                                              |
| E&S          | Environmental and Social                                                                                                                |
| E&SM         | Environmental & Social Management                                                                                                       |
| EAP          | Environmental Action Plan                                                                                                               |
| EBR          | Environmental Baseline Report                                                                                                           |
| EBSA         | Ecologically or Biologically Significant Area)                                                                                          |
| EBSAs        | Ecologically or Biologically Significant Marine Areas                                                                                   |
| ECA          | Emissions Control Area                                                                                                                  |
| ECMWF        | European Centre for Medium-Range Weather Forecasts                                                                                      |
| EDDIE        | National Electricity Distribution Network                                                                                               |
| eDNA         | Environmental DNA                                                                                                                       |
| EDS          | Emergency Disconnect Sequence                                                                                                           |
| EEA          | European Environment Agency                                                                                                             |
| EEAE         | Greek Atomic Energy Commission                                                                                                          |
| EEPR         | European Energy Programme for Recovery                                                                                                  |
| EER          | Emergency Exercise Report                                                                                                               |
| EEZ          | Exclusive Economic Zone                                                                                                                 |
| EGR          | Exhaust Gas Recirculation                                                                                                               |
| EHS          | Environmental, Health and Safety                                                                                                        |
| EIA          | Environmental Impact Assessment                                                                                                         |
| EIAPP        | Engine International Air Pollution Prevention                                                                                           |

| ABBREVIATION | EXPLANATION                                                                   |
|--------------|-------------------------------------------------------------------------------|
| EK           | Ευρωπαϊκός Κανονισμός                                                         |
| ELD          | Environmental Liability Directive                                             |
| ELSTAT       | Hellenic Statistical Authority                                                |
| EMAS         | Eco-Management and Audit Scheme (Σύστημα Οικολογικής Διαχείρισης και Ελέγχου) |
| EMDW         | Eastern Mediterranean Deep Water                                              |
| EMEP         | European Monitoring and Evaluation Programme                                  |
| EMODnet      | European Marine Observation and Data Network                                  |
| EMP          | Environmental Management Plan                                                 |
| EMSA         | European Maritime Safety Agency                                               |
| ENERGEAN     | Energean Oil & Gas SA                                                         |
| ENVID        | Environmental Identification                                                  |
| EQS          | Environmental Quality Standards                                               |
| ERP          | Emergency Response Plan                                                       |
| ESBS         | Environmental and Social Baseline Study                                       |
| ESIA         | Environmental and Social Impact Assessment                                    |
| E-SID        | Emergency Shut-in Device                                                      |
| ESM          | Environmental and Social Management                                           |
| ESMS         | Environmental and Social Management Plan                                      |
| ETS          | Emission Trading System                                                       |
| EU           | European Union                                                                |
| EUA          | European Union Allowance                                                      |
| EUOAG        | European Union Offshore Oil & Gas Authorities Group                           |
| EUROATOM     | European Atomic Energy Community                                              |
| EUROBATS     | Agreement on the Conservation of Populations of European Bats                 |
| EUROFISH     | Eurofish International Organisation                                           |
| EXXONMOBIL   | ExxonMobil Exploration and Production Greece (Crete) BV                       |
| ΕΠΕ          | Εκτίμηση Περιβαλλοντικών Επιπτώσεων                                           |
| FAR          | Fatal Accident Rate                                                           |
| FORTH        | Foundation for Research and Technology – Hellas                               |
| FRA          | Fisheries Restricted Area                                                     |
| FRAs         | Fisheries Restricted Areas                                                    |
| FRMP         | Flood Risk Management Plan                                                    |
| FUND         | International Fund for Compensation for Oil Pollution Damage                  |
| G&G          | Geology and Geophysics                                                        |
| GDP          | Gross Domestic Product                                                        |
| GES          | Good Environmental Status                                                     |

| ABBREVIATION | EXPLANATION                                                                         |
|--------------|-------------------------------------------------------------------------------------|
| GFCM         | General Fisheries Commission for the Mediterranean                                  |
| GFSPSD       | General Framework for Spatial Planning and Sustainable Development                  |
| GG           | Government Gazette                                                                  |
| GHG          | Greenhouse Gases                                                                    |
| GIIP         | Good International Industry Practice                                                |
| GIS          | Geographic Information System                                                       |
| GMOs         | Genetically Modified Organisms                                                      |
| GOA          | Gulf of America                                                                     |
| GOP          | Good Oilfield Practices                                                             |
| GR.ITA 2     | New Italy-Greece Interconnector                                                     |
| GSA          | Geographical Sub-Area                                                               |
| GU           | Gazzetta Ufficiale della Repubblica Italiana                                        |
| GUP          | General Urban Plan                                                                  |
| HAZID        | Hazard Identification                                                               |
| HAZOP        | Hazard and Operability Study                                                        |
| HCMR         | Hellenic Centre for Marine Research                                                 |
| HELLENIQ     | HelleniQ Upstream West Kerkyra SA                                                   |
| HELPE        | Hellenic Petroleum S.A.                                                             |
| HEREMA       | Hellenic Hydrocarbons and Energy Resources Management Company S.A.                  |
| HISAS        | High-resolution Interferometric Synthetic Aperture Sonar                            |
| HNCHR        | Hellenic National Commission for Human Rights                                       |
| HSE          | Health, Safety and Environment                                                      |
| HSEMS        | Health, Safety and Environmental Management System                                  |
| HSE-MS       | Health, Safety and Environment – Management System                                  |
| HVDC         | High Voltage Direct Current                                                         |
| IADC         | International Association of Drilling Contractors                                   |
| IAMZ         | Agronómico Mediterráneo de Zaragoza / Mediterranean Agronomic Institute of Zaragoza |
| IAS          | Integrated Automation System                                                        |
| IBA          | Important Birds Area                                                                |
| ICCPR        | International Covenant on Civil and Political Rights                                |
| ICE          | Intercontinental Exchange                                                           |
| ICEs         | International Council for Exploration of the Sea                                    |
| ICESCR       | International Covenant on Economic, Social and Cultural Rights                      |
| IED          | Industrial Emissions Directive                                                      |
| IFC          | International Finance Corporation                                                   |
| IGB          | Greece – Bulgaria Interconnector                                                    |

| ABBREVIATION | EXPLANATION                                                                                    |
|--------------|------------------------------------------------------------------------------------------------|
| IIR          | Ionian Islands Region                                                                          |
| ILO          | International Labour Organisation                                                              |
| IMCA         | International Marine Contractors Association                                                   |
| IMDG         | International Maritime Dangerous Goods                                                         |
| IMDG Code    | International Maritime Dangerous Goods Code                                                    |
| IMMAs        | Important Marine Mammal Areas                                                                  |
| IMO          | International Maritime Organisation                                                            |
| IMS          | Institute for Mediterranean Studies                                                            |
| INFOSAMAK    | Centre for Marketing Information and Advisory Services for Fishery Products in the Arab Region |
| IOGP         | International Association of Oil & Gas Producers                                               |
| IPA S.A.     | Igoumenitsa Port Authority S.A.                                                                |
| IPG          | International Projects Group                                                                   |
| IPPC         | Industrial Pollution, Prevention and Control                                                   |
| IRPA         | Individual Risk Per Annum                                                                      |
| ISPS         | International Ship and Port Facility Security                                                  |
| ISRA         | Important Shark and Ray Areas                                                                  |
| ISRAs        | Important Sharks and Ray Areas                                                                 |
| IUCN         | International Union for Conservation of Nature                                                 |
| JMD          | Joint Ministerial Decision                                                                     |
| KBA          | Key Biodiversity Areas                                                                         |
| KBAs         | Key Biodiversity Areas                                                                         |
| K-BOS        | Kinetic Blow Out Stopper                                                                       |
| K-BOS®       | Kinetic Blowout Stopper                                                                        |
| KM           | Κράτος Μέλος                                                                                   |
| KYA          | Κοινή Υπουργική Απόφαση                                                                        |
| LBS          | Land Based Sources                                                                             |
| LDK          | LDK Consultants SA                                                                             |
| LIW          | Levantine Intermediate Water                                                                   |
| LMP          | Liquid Mud Plant                                                                               |
| LMRP         | Lower Marine Riser Package                                                                     |
| LNG          | Liquified Natural Gas                                                                          |
| LQ           | Living Quarters                                                                                |
| LULUCF       | Land Use, Land-Use Change and Forestry                                                         |
| LUPs         | Local Urban Plans                                                                              |
| LWD          | Logging While Drilling                                                                         |
| MAH          | Major Accidents Hazards                                                                        |



| ABBREVIATION | EXPLANATION                                                                                       |
|--------------|---------------------------------------------------------------------------------------------------|
| MAP          | Mediterranean Action Plan                                                                         |
| MARPOL       | Marine Pollution Convention (International Convention for the Prevention of Pollution from Ships) |
| MAW          | Modified Atlantic Water                                                                           |
| MBBS         | Multibeam Backscatter                                                                             |
| MBES         | Multibeam Echosounder                                                                             |
| MD           | Ministerial Decision                                                                              |
| MEE (YPEN)   | Ministry of Environment and Energy                                                                |
| MGO          | Marine Gas Oil                                                                                    |
| MIT          | Ministry of Infrastructure and Transport                                                          |
| MLC          | Maritime Labor Convention                                                                         |
| MMMP         | Marine Mammals Mitigation Plan                                                                    |
| MMO          | Marine Mammal Observer                                                                            |
| MMOs         | Marine Mammal Observers                                                                           |
| MODU         | Mobile Offshore Drilling Unit                                                                     |
| MoEE         | Ministry of Environment and Energy                                                                |
| MP           | Management Plan                                                                                   |
| MPA          | Marine Protected Area                                                                             |
| MPAs         | Marine Protected Areas                                                                            |
| MPD          | Managed Pressure Drilling                                                                         |
| MSF          | Marine Spatial Framework                                                                          |
| MSFD         | Marine Strategy Framework Directive                                                               |
| MSL          | Mean Sea Level                                                                                    |
| MSP          | Maritime Spatial Planning                                                                         |
| NADF         | Non-Aqueous Drilling Fluids                                                                       |
| NADM         | Non-Aqueous Drilling Mud                                                                          |
| NAVTEX       | Navigational Telex                                                                                |
| NEAFC        | North-East Atlantic Fisheries Commission                                                          |
| NECCA        | Natural Environment & Climate Change Agency (OFYPEKA)                                             |
| NECP         | National energy and Climate Plan                                                                  |
| NER 300      | New Entrants Reserve 300                                                                          |
| NORM         | Naturally Occurring Radioactive Material                                                          |
| NORSOK       | Norsk Søkkel Konkurransesepisjon                                                                  |
| NoWO         | Notification of Well Operations                                                                   |
| NSS          | National Spatial Strategy                                                                         |
| O&G          | Oil and Gas                                                                                       |
| OA           | Operational Area                                                                                  |

| ABBREVIATION | EXPLANATION                                                          |
|--------------|----------------------------------------------------------------------|
| OBM          | Oil Based Mud                                                        |
| OCNS         | Offshore Chemical Notification Scheme                                |
| OEUK         | Offshore Energies United Kingdom                                     |
| OGP          | (International Association of) Oil & Gas Producers                   |
| OHE          | Οργανισμός Ηνωμένων Εθνών                                            |
| OHS          | Occupational Health & Safety                                         |
| OPRC         | Oil Pollution Preparedness, Response and Co-operation Convention     |
| ORB          | Oil Record Book                                                      |
| OREDA        | Offshore Reliability Database                                        |
| OSCAR        | Oil Spill Contingency and Response                                   |
| OSM          | Oil Spill Modelling                                                  |
| OSPR         | Offshore Safe Professionals Register                                 |
| OTMP         | Onshore Transport Management Plan                                    |
| OWS          | Oily Water Separator                                                 |
| P&A          | Plug and Abandonment                                                 |
| PAHs         | Polycyclic Aromatic Hydrocarbons                                     |
| PAM          | Passive Acoustic Monitoring                                          |
| PLL          | Potential Loss of Life                                               |
| PLONOR       | Pose Little or No Risk                                               |
| PM           | Particulate Matter                                                   |
| POB          | Persons on Board                                                     |
| POC          | Particulate Organic Carbon                                           |
| POPs         | Persistent Organic Pollutants                                        |
| PPA          | Personal Protective Equipment                                        |
| PPC S.A.     | Public Power Corporation                                             |
| PRTR         | Pollutant Release and Transfer Register                              |
| PS           | Performance Standards                                                |
| PSA          | Petroleum Safety Authority                                           |
| PSV          | Platform Support Vessels                                             |
| PTS          | Permanent Threshold Shift                                            |
| QRA          | Quantitative Risk Assessment                                         |
| RAC          | Risk Acceptance Criteria                                             |
| RAM          | Restricted in Ability to Maneuver                                    |
| RBMP         | River Basin Management Plan                                          |
| RCP          | Representative Concentration Pathway                                 |
| REACH        | Registration, Evaluation, Authorisation and Restriction of Chemicals |

| ABBREVIATION | EXPLANATION                                                                   |
|--------------|-------------------------------------------------------------------------------|
| REMPEC       | Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea |
| RES          | Renewable Energy Sources                                                      |
| RMS          | Root Mean Square                                                              |
| RO           | Reverse Osmosis                                                               |
| RoMH         | Report on Major Hazards                                                       |
| ROV          | Remotely Operated Vehicle                                                     |
| RSF          | Regional Spatial Framework                                                    |
| RSK          | RSK International Projects Group                                              |
| RSLR         | Relative Sea-Level Rise                                                       |
| RTC          | Risk Tolerability Criteria                                                    |
| RU           | Regional Unit                                                                 |
| SBP          | Sub-Bottom Profiler                                                           |
| SCR          | Selective Catalytic Reduction                                                 |
| SDGs         | Sustainable Development Goals                                                 |
| SDL          | Stena Drilling Limited                                                        |
| SDS          | Safety Data Sheets                                                            |
| SEA          | Strategic Environmental Assessment                                            |
| SECA         | Sulphur Emissions Control Area                                                |
| SECEs        | Safety and Environmental Critical Elements                                    |
| SEIA         | Strategic Environmental Impact Assessment                                     |
| SEP          | Significant Environmental Parameter                                           |
| SFPSSD       | Special Framework for Spatial Planning and Sustainable Development            |
| SHI          | Samsung Heavy Industries                                                      |
| SIMOPS       | Simultaneous Operations                                                       |
| SINTEF       | Stiftelsen for industriell og teknisk forskning                               |
| SMR          | Small Modular Reactors                                                        |
| SOBM         | Synthetic Oil Based Mud                                                       |
| SOLAS        | Safety of Life at Sea                                                         |
| SOPEP        | Shipboard Oil Pollution Emergency Plan                                        |
| SPA          | Special Protection Area                                                       |
| SPAMIs       | Specially Protected Areas of Mediterranean Importance                         |
| SSS          | Side-Scan Sonar                                                               |
| SSW          | Special Secretariat for Water                                                 |
| STP          | Sewage Treatment Plant                                                        |
| SVC          | Shipboard Vessel Control                                                      |
| SW           | Solid Waste                                                                   |

| ABBREVIATION | EXPLANATION                                                      |
|--------------|------------------------------------------------------------------|
| SWMP         | Solid Waste Management Plan                                      |
| TAP          | Trans-Adriatic Pipeline                                          |
| Tcf          | Trillion Cubic Feet                                              |
| TCP          | Tubing Conveyed Perforating                                      |
| TEMPSC       | Totally Enclosed Motor-Propelled Survival Craft                  |
| TFEU         | Treaty on the Functioning of the European Union                  |
| TMP          | Traffic Management Plan                                          |
| TOC          | Total Organic Carbon                                             |
| TPH          | Total Petroleum Hydrocarbons                                     |
| TR           | Temporary Refuge                                                 |
| TSS          | Total Suspended Solids                                           |
| UfM          | Union for the Mediterranean                                      |
| UN           | United Nations                                                   |
| UNCLOS       | United Nations Convention on the Law of the Sea                  |
| UNECE        | United Nations Economic Commission of Europe                     |
| UNEP         | United Nations Environment Programme                             |
| UNESCO       | United Nations Educational, Scientific and Cultural Organisation |
| UNTS         | United Nations Treaty Series                                     |
| USBL         | Ultra Short Baseline                                             |
| UTM          | Universal Transverse Mercator                                    |
| UV           | Ultraviolet                                                      |
| VDL          | Variable Deck Load                                               |
| VHF          | Very High Frequency                                              |
| VOCs         | Volatile Organic Compounds                                       |
| VR           | Valued Receptor                                                  |
| VSP          | Vertical Seismic Profile                                         |
| WBM          | Water Based Mud                                                  |
| WFD          | Water Framework Directive                                        |
| WGS          | World Geodetic System                                            |
| WGS 84       | World Geodetic System 1984                                       |
| WISE         | Water Information System for Europe                              |
| WL           | Wireline Logging                                                 |
| WMP          | Waste Management Plan                                            |
| WSOG         | Well Specific Operating Guidelines                               |
| WWF          | World Wildlife Fund for Nature                                   |
| WWTP         | Wastewater Treatment Plant                                       |

| ABBREVIATION | EXPLANATION                                          |
|--------------|------------------------------------------------------|
| YPEN         | Ministry of Environment and Energy – Greek acronym   |
| ΕΓΣΑ 87      | Hellenic Geodetic Reference System 1987 / Greek Grid |

# 1 Introduction

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## 1.1 Project title

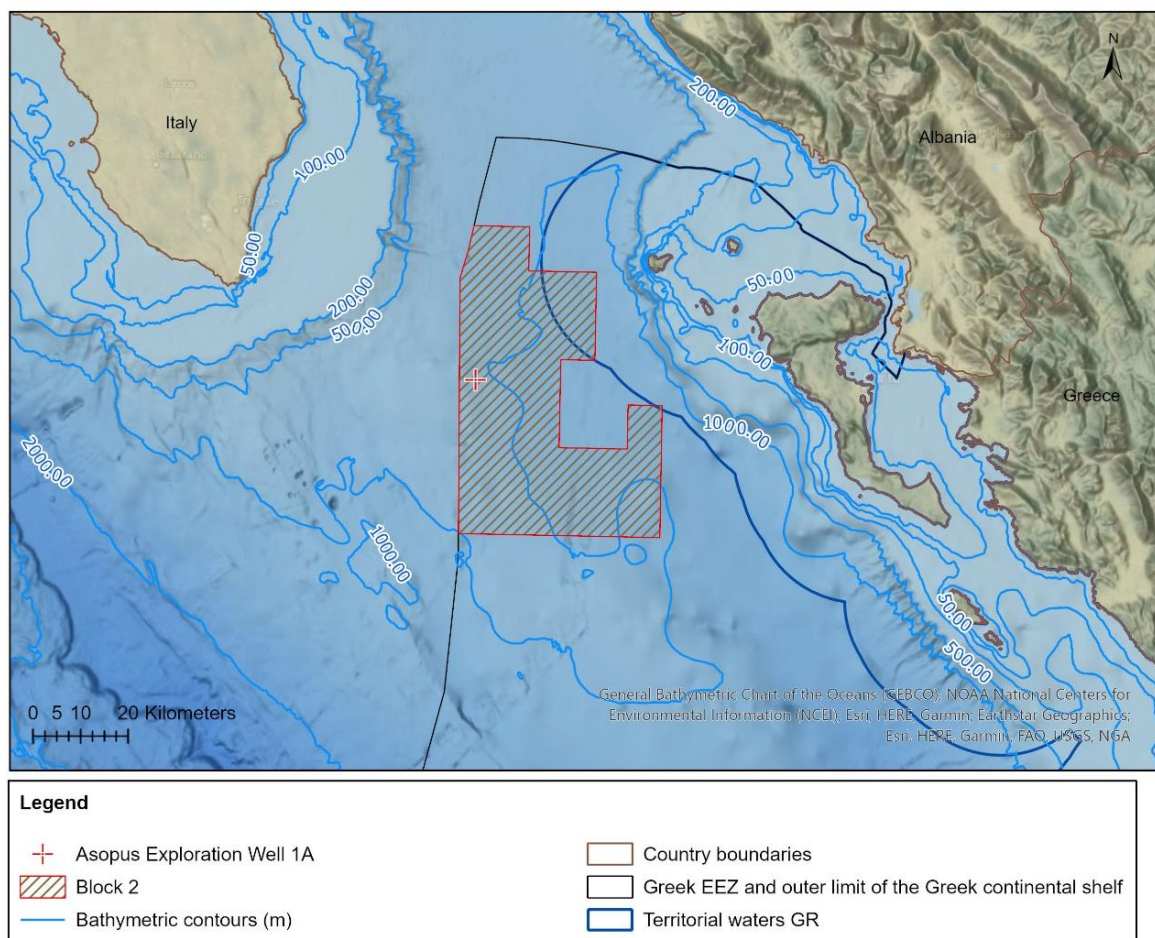
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The project is planned within the framework of the overall Exploration and Production (E&P) Programme of the Concession Area of Block 2.

The programme is included in the respective Strategic Environmental Assessment (SEA) for E&P in the Ionian Sea (covering the eleven (11) Concession Blocks including also Mesiniakos and Lakonikos Gulfs) that was prepared in 2016 (HCMR) and a respective approval was granted in 2017 (DIPA/MoEE 30373/3.7.2017). The programme consists of four (4) phases:

- **Phase 1 – Prospecting:** Identification of hydrocarbons or assessment of potential to locate hydrocarbons by any suitable method other than drilling. Typically involves a combination of geophysical and geological activities including seismic surveys, geological and geochemical sampling, electromagnetic surveys, and remote sensing.
- **Phase 2 – Exploration:** Promising areas are explored, initially with geophysical surveys of the seabed, mainly seismic, to identify targets, i.e. suitable tectonic and/or stratigraphic structures in the subsoil, which may have acted as traps for liquid and gaseous hydrocarbons. One or more exploration wells are drilled in the targets. In case of finding hydrocarbons, based on the drilling and production test data, the productive zones (reservoirs) and the exploitable reserves of each field are determined. In case of failure to identify exploitable reserves, the next phase of development is not implemented.
- **Phase 3 – Development and Production:** The extraction of hydrocarbons is carried out by exploiting the wells of the previous stage or by drilling new ones, as well as the processing, storage and transportation activities of these and their by-products to loading facilities. This phase includes the implementation of all necessary infrastructure, such as processing, temporary storage and loading facilities, a network of transport pipelines, etc. The processing of the extracted hydrocarbons to make them marketable does not include refining
- **Phase 4 – Decommissioning and rehabilitation:** After the completion of the exploitation of a hydrocarbon field, the phase follows of sealing the pipelines of all exploration and production wells, dismantling and removing all surface installations and production, storage and transportation infrastructure, and the restoration of the area.

The Concession Area of Block 2, which refers to one of the abovementioned eleven (11) Offshore concession Blocks is presented in the following map as it currently stands.



**Figure 1-1: Concession area**

The Concession Area of Block 2 is governed by a hydrocarbons lease agreement with the Hellenic Republic. The Lease Agreement (the “Lease Agreement”), dated 31 October 2017, grants exploration and exploitation rights for Block 2. The Lease Agreement was ratified by the Hellenic Parliament under Law 4525/2018 and published in Government Gazette No. 47/A/15.03.2018.

The Exploration phases of the programme, as described in the Lease Agreement, are presented in the following Table.

**Table 1-1: Exploration schedule**

| MINIMUM WORKS                 | PHASE 1<br>YEAR 1 TO YEAR 3                                         | PHASE 2<br>YEAR 4 TO YEAR 5                | PHASE 3<br>YEAR 6 TO YEAR 8   |
|-------------------------------|---------------------------------------------------------------------|--------------------------------------------|-------------------------------|
| <b>Firm activities</b>        |                                                                     |                                            |                               |
| Seismic acquisition           | Acquisition & Processing of 1,800 km 2D seismic data                | Re-evaluation of seismic data              | Re-evaluation of seismic data |
| Re-evaluation of seismic data | Magnetic & gravity survey (if possible, during seismic acquisition) | -                                          | -                             |
| Drilling                      | -                                                                   | One well                                   | One well                      |
| G&G                           | Geological studies, basin analysis                                  | Petrophysical and Geochemical analysis etc | Re-evaluation of G&G data     |



| MINIMUM WORKS          | PHASE 1<br>YEAR 1 TO YEAR 3                                   | PHASE 2<br>YEAR 4 TO YEAR 5                                                    | PHASE 3<br>YEAR 6 TO YEAR 8                                      |
|------------------------|---------------------------------------------------------------|--------------------------------------------------------------------------------|------------------------------------------------------------------|
| HSE                    | Baseline report I,<br>Environmental Action Plan<br>(EAP), etc | Baseline report II,<br>Environmental Impact<br>Assessment (EIA)                | Baseline report III,<br>Environmental Impact<br>Assessment (EIA) |
| <b>Contingent work</b> |                                                               |                                                                                |                                                                  |
| Seismic acquisition    | -                                                             | Acquisition of 3D seismic<br>data (extent depending on<br>2D and well results) | -                                                                |

*Note: Following HEREMA's approval, the original Phase 1 commitment for 2D seismic acquisition was fulfilled through the acquisition and processing of 3D seismic data, providing a higher-resolution dataset over the area of interest.*

In the framework of the exploration program, Phase 1 has been completed, with the Acquisition & Processing of 3D seismic data, bringing forward the additional contingent task which was initially part of Phase 2. In agreement with HEREMA, the commitment to execute a 2D seismic data program during Phase 1 was replaced with the acquisition of 3D seismic data.

As per the contractual and legal obligations of the operator, prior to initialization of the exploration activities including drilling of exploration wells, an Environmental and Social Baseline Study (ESBS) for Phase 2 activities, has been submitted to HEREMA (ref. number: 36594).

The framework of the Environmental and Social Baseline Study, as indicated in the Lease Agreement (Article 12.14), requires the presentation and assessment of the current status of environmental parameters and resources, in the period prior to the initialisation of exploration activities. Since the overall exploration program is to be executed in distinct phases (differentiated in relation to time, place and type of activities), the Baseline Report specified in the Lease Agreement, is to be carried out in respective stages to include information about the relevant "wider" and "immediate" study area. The first (1st) stage Baseline Report already prepared at earlier stages, presented existing E&S information for the wider study area which, according to the Approval of the SEA Study and included the entire Exploration and Exploitation Concession Area of Block 2 (since no immediate areas of operations were specified at the given time).

Following the above, the seismic survey activities were supported by the environmental and social documentation prepared for Block 2. The Environmental and Social Baseline Study (ESBS) / Environmental Baseline Report (EBR) established the pre-operational baseline conditions of the concession area and its wider area of influence, covering the offshore Block 2 area, an additional buffer zone and the closest onshore administrative unit, namely the Corfu Regional Unit. This baseline provided the reference framework for identifying sensitive environmental and social receptors prior to the commencement of exploration activities.

In parallel, the Environmental Action Plan (EAP) prepared for the offshore seismic acquisition activities set out the applicable regulatory and management framework for the surveys. It was developed to meet the requirements of the Lease Agreement and the approved Strategic Environmental Assessment, (SEA) and included the description of the seismic activities, the assessment of potential environmental and social impacts, specific mitigation measures, residual impact evaluation, environmental risk analysis and the Environmental and Social Management Plan framework. Therefore, the completed 3D seismic acquisition was carried out within an established framework aimed at avoiding, minimizing and monitoring potential impacts on marine fauna, water quality, maritime/fishing activities and other sensitive receptors.



Consequently, the following environmental related work has been previously prepared in the framework of the Block's exploration activities:

- ESBS for the whole Block 2 (Rina, 2017)
- ESBS and EAP for the 2D&3D Seismic surveys campaign for the areas of operations (Rina, 2020)

It is noted that the description of the environmental and social conditions with regards to the wider area is complementary for each stage of ESBS, since environmental information is to be updated and integrated over time, to enable the recording of any development trends. The description of the conditions of the immediate area strictly depends on the specific area where the exploration activities and operations are to be carried out.

Currently, the prospecting activities have been completed and also supplemented by the contingent works of 3D seismic data (as part of Phase 1), and thus, the Operator (Energean Hellas Ltd), together with its partners ExxonMobil Exploration and Production Greece (Crete) BV and HelleniQ Upstream West Kerkyra SA, intends to undertake the Exploration Phase activities, i.e. the drilling of a single offshore exploration well, named Asopus 1, in Block 2 of the Ionian Sea, offshore western Greece, in 2027, which is the objective of the present ESIA.

The title of the present project is:

**Environmental and Social Impact Assessment (ESIA) for the Hydrocarbon Exploration Program –  
Exploration Well Asopus-1 in Block 2 – Ionian Sea**

The Environmental and Social Impact Assessment (ESIA) of the Project is being prepared in accordance with the applicable provisions of Greek legislation and the relevant European Directives.

The overall effort has been further strengthened by the preparation of a detailed Environmental and Social Baseline Study (ESBS) which updates the previous studies prepared to date and further focuses on the specific targeted area for exploratory drilling with results and conclusions obtained from field geophysical and environmental surveys. The ESBS report is annexed in the current ESIA, whereas the main conclusions for each environmental and social parameter are presented in the ESIA's baseline chapter.

## 1.2 Project type and size

The Project comprises the drilling of one offshore exploration well (Asopus-1) within Block 2 in the Ionian Sea. The objective of the proposed activity is to evaluate subsurface geological formations and assess the potential presence of hydrocarbons. The well will be drilled using a mobile offshore drilling unit (MODU), specifically the Stena DrillMAX drillship, which is purpose designed for deep water drilling operations, utilising shore base for logistics support (Igoumenitsa Port) and Corfu Airport (CFU) for transport.

The proposed activity is temporary and limited in scope, comprising the drilling, evaluation, and subsequent plugging and abandonment of the exploration well in accordance with applicable regulatory requirements and industry good practices.

No oil or gas production or well testing is planned as part of this project and thus of the present ESIA. If hydrocarbons are identified, any further appraisal or development activities would be subject to separate permitting and environmental assessment processes in line with all respective EU and National legislative frameworks.

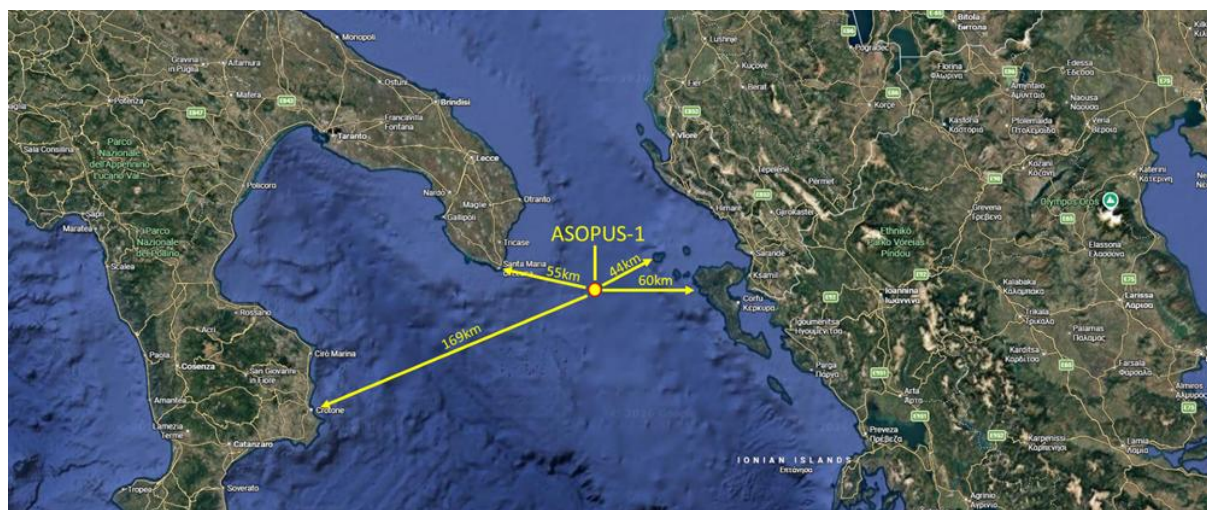
## 1.3 Geographic location and administrative dependence of the project

### 1.3.1 Project location

#### 1.3.1.1 Well location and coordinates

The proposed Asopus-1 exploration well is located within the Block 2 license area in the Greek Exclusive Economic Zone (EEZ) in the northwestern Ionian Sea. It is approximately 44.3 km (23.9 nautical miles) offshore Othonoi Island (Figure 1-2), approximately 3.2 km (1.7 nautical miles) from the Italian Exclusive Economic Zone (EEZ) and in water depths of approximately 840 m. There are no islands, coastal features, or fixed subsea installations in the immediate vicinity of the well location.

The location was selected based on technical and operational considerations, including drillship capability, well design requirements, and logistical feasibility within the Block 2 license area.



**Figure 1-2: Location of proposed Asopus-1 exploration well**

The indicative well location, including geographic coordinates and water depth, is provided in Table 1-2. The coordinates represent the planned seabed location of the well and the anticipated bottom hole position for the exploration programme.

Coordinates are provided using the World Geodetic System 1984 (WGS 84) datum, which is the standard reference system used for offshore operations in the region. The location lies within UTM Zone 34N.

**Table 1-2: Coordinates and Water Depth of proposed Asopus-1 exploration well**

| WELL     | LEASE AGREEMENT | LATITUDE         | LONGITUDE        | WATER DEPTH |
|----------|-----------------|------------------|------------------|-------------|
| Asopus-1 | Block 2         | 39° 37' 25.92" N | 18° 57' 28.51" E | ~ 840 m     |

Minor adjustments to the final well position may occur during detailed engineering or operational planning. However, any such adjustments would remain within the defined operational area, and the design envelope assessed in this ESIA. The final well location will be confirmed prior to drilling as part of the Notification of Well Operations (NoWO) submitted to the competent authority.

Moreover, in the following tables, the coordinates of the onshore logistics support base as well as Corfu Airport (CFU) are provided.

**Table 1-3: Coordinates of the proposed logistics support base**

| ONSHORE LOGISTICS SUPPORT BASE | LATITUDE (WGS84)  | LONGITUDE (WGS84) | X (ΕΓΣΑ 87) | Y (ΕΓΣΑ 87)  |
|--------------------------------|-------------------|-------------------|-------------|--------------|
| Igoumenitsa Port (Area 1)      | 39 ° 29' 04.24" N | 20 ° 15' 19.01" E | 177.765,45  | 4.376.956,26 |
| Igoumenitsa Port (Area 2)      | 39 ° 29' 06.29" N | 20 ° 15' 34.34" E | 178.134,34  | 4.377.004,21 |

**Table 1-4: Coordinates of the proposed aviation logistics base (CFU)**

| AVIATION LOGISTICS BASE (CFU)     | LATITUDE (WGS84) | LONGITUDE (WGS84) | X (ΕΓΣΑ 87) | Y (ΕΓΣΑ 87)  |
|-----------------------------------|------------------|-------------------|-------------|--------------|
| Corfu International Airport (CFU) | 39 ° 36' 07" N   | 19 ° 54' 42" E    | 148.794,88  | 4.391.282,96 |

### 1.3.1.2 Safety zone

During drilling operations, a temporary 500 m safety zone will be established around the drillship at the Asopus-1 well location to ensure navigational safety and safe conduct of offshore operations. Under international maritime regulations, a mobile offshore drilling unit (MODU) engaged in drilling is classified as a vessel restricted in its ability to maneuver, and other vessels are required to keep clear. In addition, Greek legislation designates offshore drilling units as installations subject to a mandatory 500 m safety zone, within which unauthorized access is prohibited. While the safety zone may temporarily restrict access to other marine users, the affected area and duration are limited. The establishment of the safety zone will be communicated through official maritime notifications, including NAVTEX messages and Notices to Mariners, issued by the Hellenic Coast Guard. The safety zone will be monitored throughout the drilling campaign, and support vessels may be used to assist with safety zone awareness and compliance, where necessary. The 500 m safety zone will apply only for the duration of drilling operations while the drillship is on location. Once drilling is completed and the drillship has departed the site, the safety zone will be removed, and normal maritime activities may resume. While the safety zone may result in the temporary displacement of other marine users, the affected area is limited and represents a small portion of the overall Block 2 licensed area.

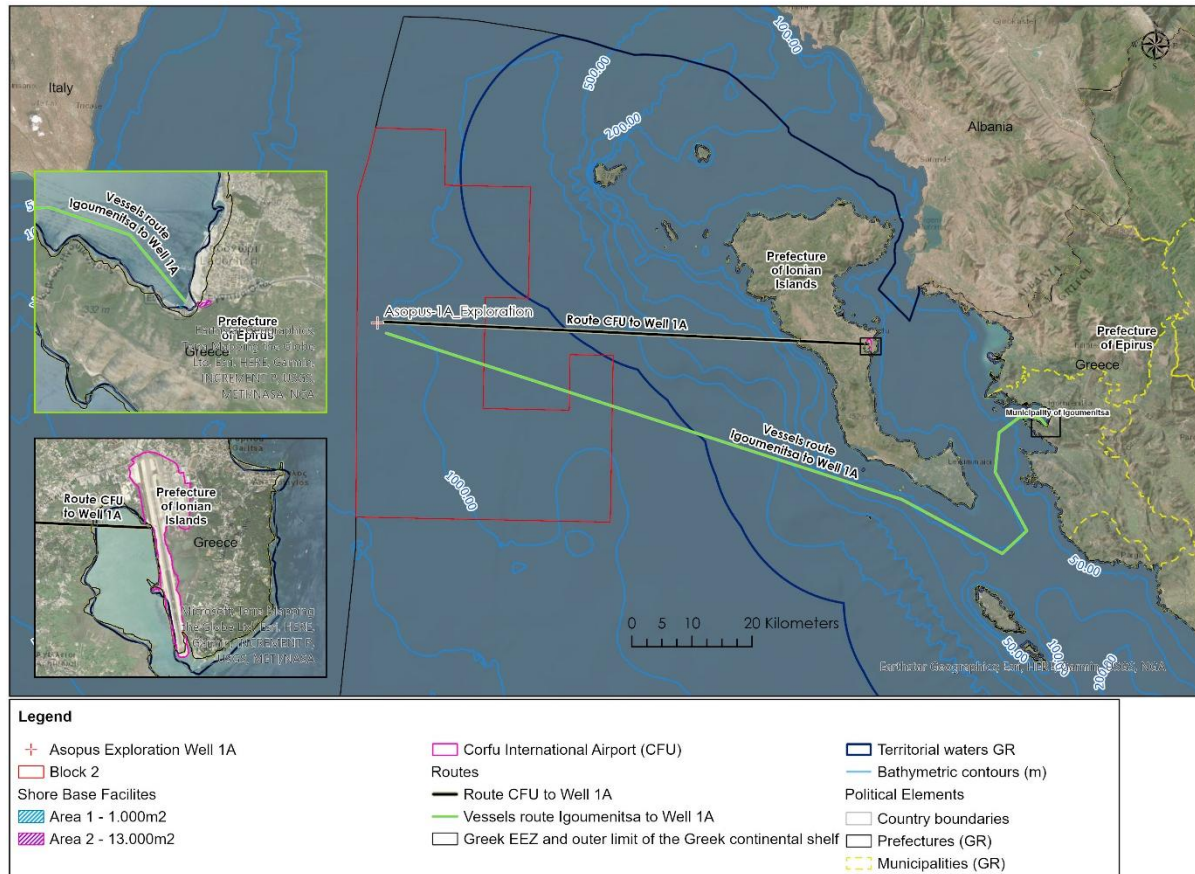
### 1.3.1.3 Administrative dependence

On the administrative level, the Block 2 covers the area located within the Regional Unit (RU) of Corfu of the Ionian Islands Region (IIR), while its Western limit follows the boundary line between the continental shelf areas of Italy and Greece according to the respective agreement of May 24, 1977 and reaffirmed/extended by the 2020 Greece-Italy Agreement on the Delimitation of their Respective Maritime Zones<sup>1</sup>, which establishes this boundary line in accordance with the principle of the median line.

<sup>1</sup> Agreement between the Hellenic Republic and the Italian Republic on the delimitation of their respective maritime zones, Athens, 9 June 2020. United Nations Treaty Series, No. 57024

Administratively, the Port of Igoumenitsa is located within the Municipality of Igoumenitsa, Regional Unit of Thesprotia, in the Region of Epirus. Its port facilities are operated by Igoumenitsa Port Authority SA (IPA SA), which has the exclusive right to use and operate the Port of Igoumenitsa under a concession agreement with the Hellenic Republic.

Corfu International Airport (CFU) “Ioannis Kapodistrias” is located on Corfu Island, within the Municipality of Central Corfu and Diapontia Islands, Regional Unit of Corfu, in the Ionian Islands Region. The airport land and infrastructure are owned by the Hellenic State, while its operation and management are carried out by Fraport Greece under the regional airports’ concession scheme.



**Figure 1-3: Area of Operations**

#### 1.3.1.4 Onshore facilities location

The Project will utilise two existing onshore support facilities for logistics and aviation activities:

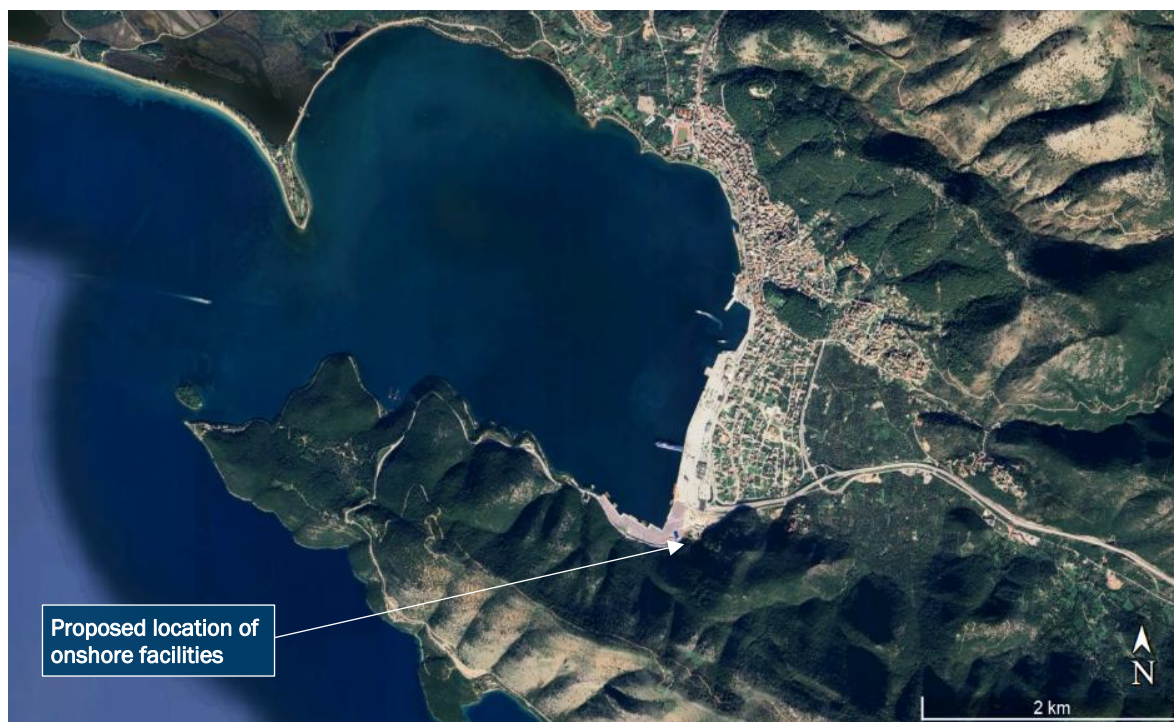
- (i) an onshore logistics / supply base located within the Port of Igoumenitsa (mainland Greece); and
- (ii) Corfu International Airport (CFU), which will be used as the helicopter operations base for personnel transfers between the onshore environment and the Mobile Offshore Drilling Unit (MODU).

The Igoumenitsa onshore logistics / supply base will operate as the principal marine logistics hub. Activities at the supply base will not extend beyond those typically associated with established offshore support ports. It will be used for the storage, staging, and loading or unloading equipment, materials, consumables, and



limited wastes associated with the Asopus-1 drilling campaign. No new marine infrastructure, dredging, reclamation, quay construction, or shoreline modification is proposed.

The location is suited to the offshore operational area via established vessel routes; indicative distances between the offshore site and Igoumenitsa Port are provided in Table 1-5. No new port infrastructure, dredging or shoreline works are required for the Project.



**Figure 1-4: Port of Igoumenitsa – location of onshore logistics / supply base (Google Maps satellite imagery)**

Figure 1-5 illustrates the location of the shore base within the Igoumenitsa port area, highlighting the defined operational footprint and its proximity to existing port infrastructure and the dedicated quayside.

The shore base incorporates zoning to minimise environmental risks, including spill sensitive quayside areas, controlled storage zones, quarantine areas, laydown areas and defined traffic corridors.



Figure 1-5: Igoumenitsa Port Orthophoto and Shore Base Location

Corfu International Airport (CFU) will provide the aviation logistics hub for routine crew transfers (and, if required, emergency response such as medical evacuation). Helicopter activities will use existing airport infrastructure and established aviation procedures. They will not alter the operational role, capacity, or regulatory status of Corfu International Airport. Any temporary project-specific arrangements (e.g., operational areas within the airport) will be accommodated within the existing airport footprint and will not require permanent expansion or modification of airport facilities. Indicative distances between the offshore site and Corfu Airport are provided in Figure 1-6.



Figure 1-6: Corfu International Airport (CFU) – helicopter operations base location Google Maps satellite imagery)

## 1.4 Transboundary context

The proposed Asopus-1 exploration well is located within the Greek Exclusive Economic Zone (EEZ) in Block 2 in the Ionian Sea, near the agreed maritime boundary between Greece and Italy. The relative location of the well site with respect to international maritime boundaries, coastal landfalls, and key logistical points is summarised in Table 1-5

The distances are derived from proximity to legally defined maritime boundaries, straight-line (great-circle) measurements for aviation routes and established commercial navigation routes for marine logistics.

**Table 1-5: Relevant Distances from the Proposed Site**

| DESTINATION                  | DISTANCE FROM SITE |         | TECHNICAL BASIS                                                             |
|------------------------------|--------------------|---------|-----------------------------------------------------------------------------|
| <i>Italian EEZ border</i>    | 3.16 km            | 1.71 nm | Shortest distance to the 1977/2020 boundary line segment (P15–P16)          |
| <i>Closest Italian coast</i> | 54.9 km            | 29.7 nm | To Punta Ristola (Santa Maria di Leuca), the nearest Italian landfall       |
| <i>Closest Greek Island</i>  | 44.3 km            | 23.9 nm | To the western shore of Othonoi Island                                      |
| <i>Closest Point (Corfu)</i> | 60.1 km            | 32.4 nm | To Cape Drastis (Northwest Corfu)                                           |
| <i>Igoumenitsa Port</i>      | 129.4 km           | 69.9 nm | Via North Corfu Channel navigation route, assuming vessel safety clearances |
| <i>Corfu Airport</i>         | 81.9 km            | 44.2 nm | Direct flight path (Great Circle) for a twin-engine medium helicopter       |

The well location lies approximately 3.16 km (1.71 nm) east of the Greece–Italy EEZ boundary. The closest Italian mainland coast is located at Punta Ristola (Apulia), approximately 54.9 km (29.7 nm) from the well, while the nearest Greek land is Othonoi Island (Diapontia island group), approximately 44.3 km (23.9 nm) from the well location.

## 1.5 Project classification

According to Ministerial Decision DIPA/37674/10-8-2016, as amended by Ministerial Decisions 2307/2018 and YPEN/DIPA/17815/1069/2022 (government Gazette 841/B' 24.2.2022) and currently in force, the main drilling activity in Asopus-1 falls under Category 5 “Mining and similar activities”, Serial Number 7 “Extraction of hydrocarbons and exploratory drilling in search of hydrocarbons” and is included in Subcategory A1 since all works of this activity are classified as such.

In addition, the onshore support facilities in Igoumenitsa Port, fall under Category 3 “Port infrastructure”, Serial Number 2a “Ports and port facilities for support of industrial activities (e.g. support of industrial facilities, fuel handling, petrochemicals or chemicals, toxic and harmful substances, quarry products, etc)” and is classified under Subcategory A2.



**Table 1-6: Project components and environmental classification**

| CATEGORY | PROJECT COMPONENT                                                                         | GROUP | NO | PROJECT CATEGORY                                                                                                                                                                                                              | CLASSIFICATION                                  |
|----------|-------------------------------------------------------------------------------------------|-------|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| Main     | Asopus-1 O&G offshore exploration well drilling                                           | 5th   | 7  | Mining activities<br>Extraction of hydrocarbons and exploratory drilling in search of hydrocarbons                                                                                                                            | A1                                              |
| Side     | Onshore support port facilities, Igoumenitsa port <sup>2</sup>                            | 3rd   | 2a | Port infrastructure<br>Ports and port facilities for support of industrial activities (e.g. support of industrial facilities, fuel handling, petrochemicals or chemicals, toxic and harmful substances, quarry products, etc) | A2<br>(for support of vessels of length L<150m) |
| Side     | Support for helicopter personal transport within Corfu International Airport <sup>3</sup> | -     | -  | NOT CLASSIFIED<br>Classified only as sole infrastructure (not within other infrastructure)<br>Temporary facilities and transport operations fall under existing Environmental Permit of Corfu International Airport           |                                                 |

Since the classification of all project components follows the classification of the project component that is classified at the highest category, the overall project is classified under subcategory A1.

Works and activities that are classified under subcategory A1 are likely to have significant impacts to the environment and therefore:

- A detailed Environmental Impact Assessment (EIA) is required in accordance with the provisions of JMD 170225/2014 as currently stands.
- According to L. 4014/2011, the competent authority for the issuance of the respective environmental permit is the Ministry of Environment and Energy (MoEE/YPEN) and in particular the Department of Environmental Permitting (DIPA).
- The road map for the submission, evaluation, consultation and final approval of environmental terms, are prescribed in Article 3 of L.4014/2011, as currently stands.
- The consulted authorities to provide their comments according to their thematic specialization is defined in JMD 1649/45/2014 titled: "Specification of the procedures for obtaining opinions and informing the public and the participation of the interested public in the public consultation during the environmental permitting of projects and activities of Category A, pursuant to the decision of the Ministry of Environment, Energy and Climate Change No. 1958/2012 (Government Gazette 21/A), in accordance with the provisions of Article 19, paragraph 9 of Law 4014/2011 (GG 209/A), as well as any other relevant detail".

<sup>2</sup> The overall onshore operations will be within the premises of Igoumenitsa Port, in a leased area by the Project Operator, i.e. Energean. Although the operations are in line with the existing Environmental Permit of the Igoumenitsa Port, the specialized operations are included in the present ESIA as they will be under the direct management of Energean as lessee of the Port's area.

It is considered best practice to include the impact assessment of the said operation within the present ESIA for completeness of the environmental and social impact assessment of the project in its whole footprint (both offshore and onshore).

<sup>3</sup> The support that will be provided through the Ioannis Kapodistrias International Airport (Corfu) – CFU, is not included in the impact assessment since it will not be under Energean's management, but in the contrary it will be a third-party transport facility that will be utilised solely for logistical support purposes and does not form part of the Project footprint. No Project-related construction, modification, expansion, dedicated infrastructure, land acquisition, or operational changes are proposed within the airport, nor is the Project expected to influence the airport's capacity, function, management arrangements, or existing patterns of use.



- The Environmental Impact Assessment (EIA) will include Forms T and Y, which define the identity of the activity subject to environmental permitting, as well as information related to the environmental permitting activity, in accordance with Ministerial Decision 167563 (GG 964/B/19-04-2013), titled: "Specification of the procedures and specific criteria for the environmental permitting of projects and activities under Articles 3, 4, 5, 6 and 7 of law 4014/2011, as provided in Article 2, paragraph 13, the specific forms for the aforementioned procedures and any other matter related to these procedures".

The environmental permitting process for the Project is governed by law 4014/2011, as amended by L. 4685/2020, titled: "Modernization of environmental legislation, transposition into Greek law of Directives 2018/844 and 2019/692 of the European Parliament and of the Council and other provisions" (GG 92/A/7.5.2020). The content and level of detail of the Environmental Impact Assessment (EIA) are defined in Joint Ministerial Decision (JMD) 170225/2014.

Moreover, for the present ESIA's compilation, all latest and up to date modification / additions to the EIA process and requirements listed below, have been considered:

- MD 5688/2018: "Amendment of the annexes of Law 4014/2011 (GG 209/A) in accordance with Article 36A of this law, in compliance with Directive 2014/52/EU "amending Directive 2011/92/EU regarding the assessment of the effects of certain public and private projects on the environment" of the European Parliament and of the Council of April 16, 2014 (GG 988/B/2018)"
- MD 1915/2018: "Amendment of the MD numbers 48963/2012 (B' 2703) and 170225/2014 (B' 135), which were issued under the authorization of Law 4014/2011 (GG 209/A), in compliance with Directive 2014/52/EU "amending Directive 2011/92/EU regarding the assessment of the effects of certain public and private projects on the environment" of the European Parliament and of the Council of April 16, 2014 (GG 304/B/2018)".
- MD 143898/9866/2024: "Amendment of contents of the environmental impact assessment (EIA) studies, for projects and activities environmental permitting of category A of L.4014/2011 aligning with article 18 of the National Climate Law (L.4936/2022).

## 1.6 Project operator and co-venturers

### 1.6.1 Background

Offshore Block 2 is in the northwestern Ionian Sea, off the coast of western Greece, and is governed by the Lease Agreement with the Hellenic Republic. The Lease Agreement, dated 31 October 2017, grants exploration and exploitation rights for Block 2 and was signed by the Hellenic Republic, represented by the Minister of Environment and Energy, and initially by Total E&P Greece BV ("Total"), Edison International SpA ("Edison"), and Hellenic Petroleum Société Anonyme ("HELPE"). The agreement was ratified by the Hellenic Parliament under Law 4525/2018 and published in Government Gazette No. 47/A/15.03.2018.

Under the original lease structure, Total held a 50% participating interest and acted as Operator, while Edison and HELPE each held 25% participating interests as non-operating co-venturers. The lease structure subsequently evolved through several consecutive transactions:

- HELPE transferred its entire 25% participating interest in the Lease Agreement, along with all associated

rights and obligations, to its affiliate Hellenic Petroleum Exploration and Production of Hydrocarbons West Kerkyra S.A. (later renamed “Helleniq Upstream West Kerkyra Single Member Societe Anonyme” or “Helleniq”). As a result, Helleniq became a co-lessee with a 25% interest in the Lease Agreement.

- Edison transferred its entire 25% participating interest in the Lease Agreement, with all associated rights and obligations, to Energean International E&P SpA (formerly Edison International E&P SpA, an Edison affiliate). Energean International E&P SpA then became co-lessee with a 25% interest in the Lease Agreement.
- Total transferred its entire 50% participating interest in the Lease Agreement, including all rights and obligations, to Energean Hellas Ltd. Energean Hellas Ltd. then became co-lessee with a 50% interest and was appointed Operator in accordance with the Lease Agreement.
- Energean International E&P SpA transferred its entire 25% participating interest in the Lease Agreement, with all rights and obligations, to Energean Hellas Ltd. As a result, Energean Hellas Ltd. increased its participating interest in the Lease Agreement to 75%.
- Energean Hellas Ltd transferred part of its participating interest (45%) in the Lease Agreement with all rights and obligations to ExxonMobil Exploration and Production Greece (Crete) B.V. and Helleniq Upstream West Kerkyra S.A. transferred part of its participating interest (15%) in the Lease Agreement with all rights and obligations to ExxonMobil Exploration and Production Greece (Crete) B.V.

The current participating interests in Block 2 are:

- ExxonMobil Exploration and Production Greece (Crete) B.V. (ExxonMobil): 60%
- Energean Hellas Ltd. (Energean): 30%, also maintaining the operatorship
- Helleniq Upstream West Kerkyra S.A. (HELLENiQ ENERGY): 10%

(collectively, the “Co-Lessees”)

The Lease Agreement became effective on 15 March 2018, initiating the First Phase of the Exploration Stage with an initial term of three years, set to expire on 14 March 2021. Subsequently, five years of consecutive extensions were granted, extending the First Phase to 14 March 2026. In addition, the Basic Exploration Stage, with an eight-year duration, was scheduled to expire on 15 March 2026.

After the Co-Lessees submitted an application, the Cabinet of Ministers granted a special extension of the Basic Exploration Stage on 9 March 2026. The Council of Ministers approved a total extension of five years (14 March 2031): three years for the second phase and two years for the third phase. This allows the Co-Lessees to enter the Second Phase of the Basic Exploration Stage, as outlined in paragraph 2.1 of Article 2 of the Lease Agreement. The first exploration well, as required by the Minimum Work Program in paragraph 3.2 of article 3, must be drilled within 18 months from the effective date of the Cabinet’s decision.

On 13 March 2026, the Co-Lessees notified HEREMA of their entry into the Second Phase, which will last three years and expire on 14 March 2029.

## 1.6.2 Operator and co-venturers profiles

Energean Hellas Ltd is part of the Energean group of companies, an independent exploration and production group with a strategic focus on the Mediterranean region. Its portfolio includes, or has included, upstream activities in Greece, Israel, Italy, Croatia and Egypt, providing a strong regional perspective relevant to

offshore Greece. Energean has longstanding upstream experience in Greece and significant offshore operating experience in the Eastern Mediterranean, including operated gas developments offshore Israel. In Block 2, Energean participates through Energean Hellas Ltd (Energean), which, as above described, holds a 30% participating interest and acts as Operator during the exploration phase, with responsibility for delivering the agreed exploration obligations on behalf of the Co-Lessees.

ExxonMobil Exploration and Production Greece (Crete) BV (ExxonMobil) is part of the ExxonMobil group and brings extensive global experience in offshore exploration and field development, including deepwater and frontier projects. In Block 2, ExxonMobil holds the largest participating interest at 60% following the 2026 farm-in transaction. During the exploration phase, ExxonMobil participates as a non-operating co-venturer and does not hold operational responsibility for exploration activities.

HelleniQ Upstream West Kerkyra S.A. (HelleniQ) is the upstream subsidiary of HELLENiQ ENERGY, a leading Greek energy group with longstanding involvement in the national hydrocarbons sector. HelleniQ provides continuity from the earlier licence structure and participates in Block 2 as a non-operating co-venturer with a 10% participating interest.

### 1.6.3 Operator credentials – energean

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Since 2019, Energean has established demonstrable offshore well operator credentials through the planning and execution of multiple offshore drilling campaigns with drillships in the Eastern Mediterranean and North Africa. These campaigns covered exploration, appraisal, and development wells in deepwater and ultra-deepwater environments, conducted in accordance with prevailing safety, environmental and regulatory standards. This operating track record provides a robust basis for the proposed Asopus-1 offshore exploration well in Block 2.

This experience demonstrates Energean's ability to plan, manage and execute offshore drilling activities safely and efficiently. Core competencies include drillship selection and contracting, well design, drilling operations, marine and aviation logistics, contractor coordination, regulatory engagement and post-well close-out.

#### 1.6.3.1 Operated offshore drilling experience – Israel

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Energean has conducted multiple offshore drilling campaigns in Israel, using modern drillships in deepwater environments under the oversight of the Israeli Ministry of Energy and Infrastructure. These campaigns represent the most directly relevant precedent for the Asopus-1 Project in terms of offshore operational complexity and regulatory requirements.

In 2019, Energean deployed the Stena DrillMAX drillship to drill three development wells and one exploration well (Karish North). The campaign was completed safely and in full compliance with applicable regulatory and environmental requirements, demonstrating Energean's capabilities in offshore drilling operations, environmental management, marine logistics and contractor coordination in the Eastern Mediterranean.

In 2022, Energean executed a further offshore drilling campaign using the Stena IceMAX drillship. This six-well campaign comprised development, appraisal and exploration activities, including:

- one development well, involving the re-entry, sidetrack and completion of the previously drilled Karish North well;
- one appraisal well (Karish Main-04); and
- four exploration wells across multiple licence areas offshore Israel.

The 2022 campaign required extended drillship mobilisation, coordination of multiple well objectives and engagement with several regulatory authorities. It was executed using Energean's established health, safety and environmental management systems, further demonstrating the company's ability to manage complex, multi-well offshore drilling campaigns safely and consistently across different licence areas.

In 2026, Energean is conducting a two-well development drilling campaign offshore Israel as part of the Katlan field development, utilising the Saipem Santorini drillship, further reinforcing its ongoing operational presence and experience in the region.

Taken together, the 2019, 2022, and 2026 Israeli offshore drilling campaigns demonstrate Energean's consistent, operator-led offshore drilling capability, including the safe execution of development, appraisal and exploration wells using different drillships, and the effective management of environmental and safety risks in deepwater offshore settings.

The proposed Asopus-1 well therefore represents a continuation of established offshore drilling activities previously undertaken by Energean as Operator, using comparable drilling units and operational systems. The same drillship used in the Israel 2019 campaign, Stena DrillMAX, is proposed for the drilling of the Asopus-1 exploration well in Block 2, building on its proven operational performance.

### 1.6.3.2 Operated offshore drilling experience – Morocco

Energean has also acted as operator of offshore licences in Morocco, extending its offshore drilling activities into a different regulatory and operational environment. In 2024, Energean drilled one offshore appraisal well using the Stena Forth drillship. This activity demonstrates Energean's ability to safely mobilise and operate a drillship, manage offshore logistics and contractors, engage with regulatory authorities and execute drilling operations in accordance with approvals and international safety and environmental standards in a noncore jurisdiction.

### 1.6.3.3 Operated offshore drilling experience – Prinos field in Greece

Energean has a long operational history in Greece through the Prinos offshore development, located in the North Aegean Sea near Kavala. Activities have included offshore drilling operations, well interventions, logistics coordination, marine support, and environmental management. To date, Energean has drilled three wells and conducted seventeen well intervention campaigns at Prinos, maintaining an excellent HSE performance record in line with its HSE and environmental management systems and applicable Greek and EU regulatory requirements, with safe activities adjacent to areas with extensive tourist and fishing activity. This experience demonstrates familiarity with Greek and EU regulatory requirements, offshore operations in Greek waters, and the management of drilling, intervention, and associated environmental risks through established HSE and environmental management systems.

#### 1.6.3.4 Non-Operated offshore exploration experience

In addition to its operated activities, Energean has participated as a non-operating partner in offshore exploration wells led by international oil and gas companies. This includes participation in the Orion-1X offshore exploration well in Egypt, operated by a subsidiary partly owned by Eni, and involvement as a joint-venture partner in the Isabella offshore exploration and appraisal programme in the UK Continental Shelf, operated by a TotalEnergies subsidiary. Although Energean was not the designated operator for these wells, its role involved subsurface evaluation, well planning, drilling programme review, regulatory engagement and post-well technical assessment within established joint-venture governance structures. These activities complement Energean's operated drilling record by demonstrating offshore exploration experience both as an operator and an active technical partner.

#### 1.6.3.5 Summary and relevance to Asopus-1

Since 2019, Energean has conducted multiple drillship-based offshore well operations across several jurisdictions, including four wells in Israel in 2019, six wells in Israel in 2022, and an appraisal well in Morocco in 2024. Collectively, these activities demonstrate Energean's established experience in drillship-based offshore operations, encompassing development, appraisal and exploration wells, delivered with a consistent emphasis on safety, environmental management and regulatory compliance. This operating history supports the conclusion that the proposed Asopus-1 exploration well will be managed by an operator with proven deepwater offshore drilling capability.

#### 1.6.4 Project owner representatives

The person responsible for the ESIA on behalf of the Project Owner is:

**Table 1-7: Details of the project owner**

| COMPANY         | ENERGEAN                                                        |                                                                                       |
|-----------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Address:        | 32 Kifisias Avenue, 151 25 Maroussi                             |  |
| Telephone:      | +30 210 8174200                                                 |                                                                                       |
| Email:          | pkaratokis@energean.com                                         |                                                                                       |
| Web:            | <a href="https://www.energean.com">https://www.energean.com</a> |                                                                                       |
| Contact Person: | Panagiotis Karatokis, Head of HSE, Greece                       |                                                                                       |

#### 1.7 Environmental consultant

This study was prepared by LDK Consultants SA – Environment and Water Department, in collaboration with the company RSK IPG. In order to execute the full scope of the projects, a number of specialist consultants have been appointed to deliver specific workstreams, as presented below.

The contact details of the main environmental consulting companies are as follows:

**Table 1-8: Details of the environmental consulting companies**

| COMPANY         | LDK CONSULTANTS SA                                                                      |                                                                                     |
|-----------------|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Address:        | 21 Thivaidos Passage, 145 64, Kifisia                                                   |  |
| Telephone:      | +30 210 8196700                                                                         |                                                                                     |
| Email:          | <a href="mailto:env@ldk.gr">env@ldk.gr</a> , <a href="mailto:cni@ldk.gr">cni@ldk.gr</a> |                                                                                     |
| Web:            | <a href="http://www.ldk.gr">www.ldk.gr</a>                                              |                                                                                     |
| Contact Person: | Costis Nicolopoulos, Head of Environment and water Department LDK, Project Manager      |                                                                                     |
| COMPANY         | RSK INTERNATIONAL PROJECTS GROUP (IPG)                                                  |                                                                                     |
| Address:        | 65 Sussex Str, Glasgow, G41 1DX, UK                                                     |  |
| Telephone:      | +44 (0)1928 726006                                                                      |                                                                                     |
| Email:          | <a href="mailto:DWatson@rsk.co.uk">DWatson@rsk.co.uk</a>                                |                                                                                     |
| Web:            | <a href="https://rskgroup.com">https://rskgroup.com</a>                                 |                                                                                     |
| Contact Person: | Dave Watson, Director                                                                   |                                                                                     |

The interdisciplinary team involved in the preparation of this Environmental and Social Impact Assessment Study, as well as the supporting studies, is presented in the table below.

**Table 1-9: Study Team LDK – RSK**

| NAME                                           | SPECIALIZATION                                                                                                                                         | COMPANY            |
|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| <b>Overall Project Coordination</b>            |                                                                                                                                                        |                    |
| Costis Nicolopoulos                            | MSc Environmental Engineer, Project Manager / Environmental Permitting of Infrastructure Projects                                                      | LDK Consultants SA |
| Dr Dave Watson                                 | BSc (Hons) Marine and Freshwater Biology, PhD in Marine Chemistry, Director, Oil Spill and Cutting drilling modelling lead reviewer & Project Director | RSK IPG            |
| <b>ESBS – ESIA Team and Supporting Studies</b> |                                                                                                                                                        |                    |
| Mina Paidousi                                  | MSc Chemical Engineer / EIA Expert                                                                                                                     | LDK Consultants SA |
| Nikos Misyris                                  | BSc Geology & Geoenvironment, MSc in Energy / Senior Geo-environmental Consultant & EIA Coordinator                                                    | LDK Consultants SA |
| Eleni Avramidi                                 | MSc Environmental Engineer / Marine Biology Researcher / Marine Ecology Specialist                                                                     | LDK Consultants SA |
| Katerina Boutsikou                             | MSc Chemical Engineer / Waste Management Specialist                                                                                                    | LDK Consultants SA |
| Elena Ioannaki                                 | MSc Environmental Engineer / Natural Environment & Mitigation Measures                                                                                 | LDK Consultants SA |
| Despoina Athanasiou                            | MSc Environmental Engineer / Natural Environment & Environmental Monitoring                                                                            | LDK Consultants SA |
| Konstantina Kousta                             | MSc Mining Engineer / EIA Expert                                                                                                                       | LDK Consultants SA |
| Petros Vitalis                                 | MSc Environmental Scientist / GIS Expert & Biotic Environment                                                                                          | LDK Consultants SA |
| Melina Mikelis                                 | MA in International Comparative Law / Sociology / Socio-economic Impacts                                                                               | LDK Consultants SA |
| Chrysanthi Synodinou                           | MSc Economist                                                                                                                                          | LDK Consultants SA |
| Dr. Frithjof Kuepper                           | PhD Marine Biologist                                                                                                                                   | LDK Consultants SA |

| NAME                    | SPECIALIZATION                                                                                                                                                                                 | COMPANY                                     |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| Dr. Kaliopi Gkikopoulou | PhD Marine Biologist / Marine Mammal Observer (MMO) / Marine Mammal Baseline                                                                                                                   | LDK Consultants SA                          |
| Ioanna Koutsomichou     | Marine Geologist / Marine Mammal Observer (MMO) / Marine Mammal Baseline                                                                                                                       | LDK Consultants SA                          |
| Jakob Fric              | Physicist / Avifauna expert / Avifauna Baseline                                                                                                                                                | LDK Consultants SA                          |
| Efstratios Bourdakis    | Forester / Avifauna expert / Avifauna Baseline                                                                                                                                                 | LDK Consultants SA                          |
| Dr. Nikos Papadopoulos  | Research Director, Head of the Laboratory of Geophysical Satellite Remote Sensing & Archaeoenvironment                                                                                         | LDK Consultants SA, FORTH, GeoSat ReSeaArch |
| Dr. Alexis Tourtas      | Research Associate, Laboratory of Geophysical Satellite Remote Sensing & Archaeoenvironment                                                                                                    | LDK Consultants SA, FORTH, GeoSat ReSeaArch |
| Alexandra Pierozynska   | Marine Biologist & Geologist / MMO & PAM Operator / Baseline surveys                                                                                                                           | LDK Consultants SA<br>Lighthouse SpA        |
| Pietro Leanza           | Biologist / Avifauna expert / Baseline surveys                                                                                                                                                 | LDK Consultants SA<br>Lighthouse SpA        |
| Kathy Bradshaw          | BSc (Hons) Biology with Education (Dip Ed), MB Administration, MSc Marine Resource Development and Protection, MCIWEM, C.WEM.<br>Technical Director, Marine lead and PM Support                | RSK IPG                                     |
| Dr. Joe Green           | BSc (Hons), PhD Marine Oil Spill Response, Associate Director, Project Manager, ESIA Chapter review (Non-Routine) OSM / CDM review support & lead chemical use and post-drill monitoring plan. | RSK IPG                                     |
| Ruairidh Norwood        | BSc (Hons) Marine Biology, MSc Environmental Management, Marine Consultant, Assistant Project Manager                                                                                          | RSK IPG                                     |
| Sam Olsen               | BSc (Hons) Marine Biology, MS: Global wildlife health and conservation, Senior Marine Consultant, Biological & Physical Env. ESBS & ESIA Reviewer coordinating /support                        | RSK IPG                                     |
| Andrew Bendell          | BSc (Hons) Marine Biology and Oceanography, MSc Marine Resource Development & Protection, Associate Director, Biological Env. ESBS & ESIA                                                      | RSK IPG                                     |
| Dr Matthew Richmond     | BSc Biology with Oceanography, MSc Marine Biology, PhD Marine Biodiversity and Biogeography, Principal Marine Consultant, Barcelona Convention                                                 | RSK IPG                                     |
| Hellen O'Neil           | BSc (Hons) Geography, MSc Science of Health, Safety and the Environment, Associate Director, Cumulative Impacts                                                                                | RSK IPG                                     |
| Georgia Harris          | BSc Marine Vertebrate Zoology, MSc Marine Environmental Protection, Biological Env. & Cumulative Impact support                                                                                | RSK IPG                                     |
| Dr Natalie Sokol        | PhD Climate and Development, Climate Change                                                                                                                                                    | RSK IPG                                     |
| James Brocklehurst      | BSc International Environmental Biogeoscience, Principal Marine Consultant, ESIA Env. Management Plan (Pollution Prevention Plan, Chemical Use Plan)                                           | RSK IPG                                     |
| Amy Fierl               | BSc (Hons) Geography and Sport Studies, MSc Transport Planning, Associate Director, Onshore Traffic Management Plan Review support                                                             | RSK SCP Transport                           |
| Ian Whickett            | HND Civil Engineering, Senior Associate Director, Onshore Traffic Management Plan Reviewer                                                                                                     | RSK SCP Transport                           |
| Dr Lucy Cambell         | PhD Mathematics, BSc (Hons) Mathematics-Physics, Director, Shipping and Navigation Assessment (Lead)                                                                                           | RSK, ANATEC                                 |



| NAME                | SPECIALIZATION                                                                                                                                                   | COMPANY                              |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| Adam Foster         | BSc Mathematics, Head of Renewables / Principal Risk Analyst, Shipping and Navigation Assessment                                                                 | RSK, ANATEC                          |
| Sara Xoubanova      | BSc Marine Science, MSc Marine Science, MSc Environmental Management, Commercial Fisheries Specialist, Biological & Socio-economic Env. ESBS                     | RSK, BBML                            |
| Gwenc'hlan Tournier | BSc (Hons) Music Systems Engineering, Senior Acoustics Consultant, Physical Env. ESBS Reviewer                                                                   | RSK ACOUSTICS                        |
| Patrick Clark       | MA Management, BSc Geological Science, Director, Physical Env. ESBS & Project/Data Documentation                                                                 | RSK, HYDROFIX                        |
| Greg Tandy          | BSc Ocean Science, MSc Hydrography, Diploma in Harbour Masters. ESR /ESBS Reviewer & Project/Data Documentation support                                          | RSK, HYDROFIX                        |
| Bruce Murdoch       | ME Mechanical Engineering, QRA / RoMH Lead                                                                                                                       | RSK, PD&MS                           |
| Dr Marcelo Cabral   | PhD in Coastal and Oceanographic Engineering, Master in Coastal and Oceanographic Engineering, Modelling Manager, OSM & Cuttings Dispersion Modelling Lead       | RSK, CSL BRAZIL                      |
| Peter Ward          | MPhil. in Sound and Vibration Studies, BSc. (Hons) in Geophysics and Planetary Physics, BSc. (Commendation) in Engineering, Director, Underwater Noise Modelling | RSK, AWARD ENVIRONMENTAL CONSULTANTS |
| Dr Niall Brady      | BA, MA, PhD, Marine Archaeologist, Socio-economic Env. ESBS Reviewer & Project/Data Documentation                                                                | RSK, ADCO                            |

Further subconsultants appointed from LDK and RSK to support specialist workstreams for the fulfilment of ESBS and ESIA requirements are presented hereby.

**Table 1-10: Collaborating companies to present ESBS – ESIA**

| COMPANY                                                                             | DETAILS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p><a href="https://www.lighthouse-geo.com">https://www.lighthouse-geo.com</a>.</p> <p>Lighthouse Team provide insightful information on the seabed morphology, site analyses, and a full range of solutions for the construction across all the project phases: from project inception to feasibility analysis, engineering, physical development/construction, and completion. Employ experienced surveyors, geologists and geophysicists, that have consistently proven to be the most valuable asset, to offer tailor-made solutions from beginning to end, with a smart use of knowledge and technology.</p> <p><b>Responsible for:</b></p> <ul style="list-style-type: none"> <li>• LOT1-Geophysical surveys: Comprehensive geophysical survey to deliver high-quality datasets including multibeam echosounder (MBES) bathymetry, multibeam backscatter (MBBS), sub-bottom profiler (SBP), side-scan sonar (SSS), and magnetometer data.</li> <li>• LOT2-Environmental surveys: Integrated environmental survey to deliver marine, physical, biological and socio-economic components across both the wider Block 2 area and the immediate drilling well target.</li> </ul> |

| COMPANY                                                                             | DETAILS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><a href="https://www.ecots.it">https://www.ecots.it</a></p> <p>EcoTechSystems (ETS) provides scientific support in the areas of marine characterization and monitoring. It specializes in the design, management, and execution of marine and oceanographic environmental surveys, studies in transitional environments and inland waters, with a particular focus on chemical contamination and the fate of contaminants. Drawing on its academic expertise and extensive experience in marine biology and oceanography. It provides technical and scientific services for oceanographic and current-measuring studies, marine biodiversity studies, and fishery resource analyses, as well as marine mammal, reptile, and bird censuses.</p> <p><b>Responsible to deliver:</b> environmental analysis, data assessment and reporting in LOT2.</p> |
|    | <p><a href="https://bluemetoocean.com">https://bluemetoocean.com</a></p> <p>Blue Metocean Consultants srls is high specialized company providing independent metocean consultancy services in Offshore Renewable, O&amp;G, Maritime &amp; Civil engineering sectors. With more than 20 years of experience in consultancy world, provides specialized support on offshore, waterfront and coastal engineering projects.</p> <p><b>Responsible to deliver:</b> ambient noise assessment and reporting in LOT2</p>                                                                                                                                                                                                                                                                                                                                       |
|    | <p><a href="https://hydrofix.co.uk">https://hydrofix.co.uk</a></p> <p>Hydrofix is an RSK company and Marine Geoscience Consultancy specialising in offshore site investigation, seabed preparation and construction support throughout the project life cycle.</p> <p><b>Responsible to deliver:</b> Geophysics review, assessment and reporting.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|   | <p><a href="https://rskacoustics.com">https://rskacoustics.com</a></p> <p>RSK Acoustics is a specialist acoustics, noise and vibration consultancy within the wider RSK Group. They help clients manage how sound and vibration affect buildings, infrastructure, industrial operations and the environment.</p> <p><b>Responsible to deliver:</b> Review of the underwater noise model</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|  | <p><a href="https://www.brownandmaymarine.com">https://www.brownandmaymarine.com</a></p> <p>Brown &amp; May Marine Ltd is an RSK company. Based in the UK they are a marine and fisheries consultancy that specialises in managing the interaction between offshore developments and the fishing/marine environment. They mainly support offshore wind, oil &amp; gas, subsea cable and marine infrastructure projects.</p> <p><b>Responsible to deliver:</b> Socio-economic (commercial fisheries) review &amp; assessment</p>                                                                                                                                                                                                                                                                                                                        |
|  | <p><a href="https://www.pdms-group.com">https://www.pdms-group.com</a></p> <p>PD&amp;MS is an RSK company and is a UK-based engineering and project delivery company that works mainly in the energy sector. Founded in 2002 and headquartered in Aberdeen, the company provides full lifecycle engineering support for oil &amp; gas, renewables, nuclear, and other industrial projects.</p> <p><b>Responsible to deliver:</b> quantitative risk assessment (QRA) and report on major hazards (RoMH)</p>                                                                                                                                                                                                                                                                                                                                             |
|  | <p><a href="https://www.scptransport.co.uk">https://www.scptransport.co.uk</a></p> <p>SCP Transport is a UK based RSK company. They are a transport planning and highway infrastructure consultancy that helps developers, local authorities and infrastructure clients design and deliver transport systems for new developments and public projects.</p> <p><b>Responsible to deliver:</b> onshore traffic management plan</p>                                                                                                                                                                                                                                                                                                                                                                                                                       |
|  | <p><a href="https://brasil.groupcls.com/en/">https://brasil.groupcls.com/en/</a></p> <p>CLS Brasil is a Brazilian technology-based company working in offshore oceanography, coastal areas, water bodies, environment, and telecommunications.</p> <p><b>Responsible to deliver:</b> metocean data, oil spill and cuttings dispersion modelling</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| COMPANY                                                                           | DETAILS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p><a href="https://www.anatec.com">https://www.anatec.com</a></p> <p>Anatec Ltd is a specialist UK consultancy focused on marine, offshore, and energy-sector risk assessment and safety analysis. Established in 2001 and headquartered in Aberdeen, the company helps clients make “risk-based decisions” for offshore developments, shipping operations, ports, renewables, subsea infrastructure, and major marine projects.</p> <p><b>Responsible to deliver:</b> marine traffic management plan and support impacts and risks to the maritime.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|  | <p><a href="https://adco-ie.com">https://adco-ie.com</a></p> <p>ADCO Archaeology is an Irish specialist archaeology and marine heritage consultancy focused on underwater, coastal and maritime archaeology. They work on infrastructure and development projects where there may be archaeological or heritage impacts in marine, freshwater or intertidal environments.</p> <p><b>Responsible to deliver:</b> Socio-economic marine cultural heritage review &amp; assessment &amp; Cultural Heritage Management Plan (CHMP).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|  | <p><a href="https://www.iesl.forth.gr/en">https://www.iesl.forth.gr/en</a>, <a href="https://www.iesl.forth.gr/en/geosat-research-lab-ims-forth">https://www.iesl.forth.gr/en/geosat-research-lab-ims-forth</a></p> <p>Since 1996, the Laboratory of Geophysical - Satellite Remote Sensing &amp; Archaeo-environment (GeoSat ReSeArch LAB) of IMS/FORTH is active in basic and applied research in the fields of Geophysical Prospection, Satellite Remote Sensing, Aerial Reconnaissance, Geographical Information Systems (GIS), 3D Reconstructions, Virtual Reality applications and Archaeo-environment and has been widely and internationally recognized due to the quality of the results of the research projects carried out, the services provided, and the training of students and professionals both in Greece &amp; abroad.</p> <p><b>Responsible to deliver:</b> review of registries, interpretation of magnetometer data, and development of the Cultural Heritage Management Plan (CHMP).</p> |

## 2 Non-technical summary

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### 2.1 Key project details

#### 2.1.1 Background

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This Project and its associated activities form part of the overall Hydrocarbon Exploration and Production (E&P) Programme for the Concession Area, Block 2. The Block 2 Concession Area is governed by a hydrocarbon lease agreement with the Hellenic Republic. The Lease Agreement (the 'Lease Agreement'), dated 31 October 2017, grants exploration and production rights for Block 2. The Lease Agreement was ratified by the Hellenic Parliament under Law 4525/2018 and published in the Government Gazette No. 47/A/15 March 2018.

This programme has been assessed as part of the Strategic Environmental Assessment (SEA) process for the exploration and production (E&P) of hydrocarbons in the Ionian Sea, through which the eleven (11) Concession Blocks, including the Messinian and Laconic Gulfs. To fulfil the objectives of the EIA process, a Strategic Environmental Impact Assessment (SEIA) was prepared in 2016 by the Hellenic Centre for Marine Research (ELKETHE, 2016), for which the relevant approval was issued in 2017 (DIPA/YPEN 30373/3.7.2017).

The programme, as set out in the aforementioned EIA, consists of four (4) phases.

It should be noted that a description of the environmental and social conditions relating to the wider area is necessary for each stage of the programme's implementation. In particular, an Environmental and Social Baseline Study (ESBS) is being carried out, as environmental information is updated and incorporated over time to enable the identification of any trends. The description of conditions in the immediate vicinity depends entirely on the specific area where the research activities and works are to be carried out.

At present, exploration activities have been completed and have also been supplemented by the associated 3D seismic data acquisition work, as part of Phase 1. Consequently, the Operator (Energean Hellas Ltd), together with its partners, ExxonMobil Exploration and Production Greece (Crete) BV and HelleniQ Upstream West Kerkyra SA, intends to commence the Exploration Phase activities, namely the drilling of one (1) offshore exploration well, named

'Asopos-1', in Block 2 of the Ionian Sea, off the coast of western Greece, in 2027, which forms the subject of this EIA.

#### 2.1.2 Summary description

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The Asopos - 1 will be carried out as a single, predominantly vertical well at great sea depths, using a Mobile Offshore Drilling Unit (MODU), hereinafter referred to as the 'floating drilling unit'. The floating drilling unit will maintain its position using a dynamic positioning (DP) system, without the use of anchors, thereby avoiding seabed disturbance associated with anchoring. The well will be drilled sequentially in sections of progressively smaller diameter, using water-based drilling mud, the installation of steel casing and the

carrying out of cementing operations, in order to ensure the integrity of the well and the effective isolation of the individual underground geological formations.

The shallow sections of the well will be drilled without the use of a cuttings riser or drilling fluids (riserless), using seawater and water-based drilling fluids (slurries), whilst drilling cuttings and associated drilling fluids will be discharged near the seabed, in accordance with the existing regulatory framework. Following the installation of the surface casing and the subsea blowout preventer (BOP), the deeper sections will be drilled using a riser. The returned drilling fluids will be channelled to the drilling rig, where, using appropriate solids separation equipment, cuttings will be separated and the fluids will be treated for reuse. Water-based fluids will be used exclusively throughout the drilling programme. The geological formations will be assessed using well logging and, where required, by carrying out a short vertical seismic profile (VSP). No production testing or gas flaring is planned.

Offshore operations will be supported by two platform supply vessels (PSVs – PSVs), which will operate between the drilling rig and the temporary onshore support base within the existing Port of Igoumenitsa. Personnel will be transported by helicopter from Corfu International Airport (CFU). Project activities at both locations (the onshore base and Corfu International Airport) will be confined to the existing and authorised port and airport infrastructure. There is no requirement to construct a new port or quay, carry out dredging or land reclamation works, make alterations to the coastline, undertake works on the runway, or permanently extend the airport's facilities.

The duration of drilling operations is estimated at approximately 57 days in the case of a dry well and at approximately 67 days in the event of hydrocarbon discovery. For the purposes of the environmental assessment, a conservative maximum duration of 90 days (i.e. the worst-case scenario) has been adopted to allow for any potential delays due to adverse weather conditions or operational requirements. Throughout the period during which the floating drilling unit remains at the work site, a temporary safety zone with a radius of 500 m will be in force, covering a total area of approximately 0.79 km<sup>2</sup>. Once the work has been completed, the well will be permanently abandoned by means of safe plugging and abandonment. According to the existing abandonment plan, the wellhead will remain in place, occupying a permanent footprint on the seabed of less than 1 m<sup>2</sup>. The Project does not involve the installation of pipelines, production facilities or other permanent subsea infrastructure.

### 2.1.3 Environmental classification

In accordance with Ministerial Decision DIPA/37674/10 August 2016, as amended by Ministerial Decisions 2307/2018 and YPEN/DIPA/17815/1069/2022 (Government Gazette 841/B'/24 February 2022) and currently in force, the main activity of the Asopos-1 drilling project falls under Group 5 'Mining and related activities', serial number 7

'Extraction of hydrocarbons and exploratory drilling for hydrocarbons' and is classified under Sub-category A1, given that all works relating to this activity are classified as such.

Furthermore, the onshore support facilities at the Port of Igoumenitsa fall within Group 3 'Port works', serial number 2a 'Ports and port facilities serving industrial activities (e.g. serving industrial facilities, handling of

fuels, petrochemicals or chemical products, toxic and harmful substances, quarry products, etc.)' and are classified under Sub-category A2.

Given that the classification of all project components follows the classification of the project component classified in the highest category, the project as a whole is classified in Subcategory A1.

This EIA has been prepared in accordance with current Greek legislation and the relevant European directives. It is also based on the updated Environmental and Social Baseline Study (ESBS), which incorporates the results of the geophysical and environmental field surveys carried out in the specific area as part of the project.

#### 2.1.4 Geographical location and administrative affiliation

The proposed 'Asopos-1' exploration well is located within Block 2 of the Greek Exclusive Economic Zone (EEZ) in the north-western Ionian Sea, at a depth of approximately 840 m. There are no islands, coastal features or fixed subsea installations in the immediate vicinity of the well site.

The drilling site is situated approximately 3.16 km (1.71 nm) east of the Greece–Italy EEZ boundary. The nearest Italian mainland coast is at Punta Ristola (Apulia), approximately 54.9 km (29.7 nm) from the drilling site, whilst the nearest Greek landmass is Othonoi Island (part of the Diapontia Islands), approximately 44.3 km (23.9 nm) from the drilling site.

At an administrative level, Block 2 covers the area situated within the Regional Unit (RU) of Corfu in the Region of the Ionian Islands (PIN), whilst its western boundary follows the demarcation line between the areas of the continental shelf of Italy and Greece, in accordance with the relevant agreement of 24 May 1977, which was confirmed/extended by the 2020 Greece–Italy Agreement on the delimitation of their respective maritime zones<sup>4</sup>, which defines this dividing line in accordance with the median line principle.

Administratively, the Port of Igoumenitsa is situated within the Municipality of Igoumenitsa, in the Regional Unit of Thesprotia, in the Region of Epirus. The port facilities are operated by the Igoumenitsa Port Authority SA (OLIG SA), which holds the exclusive right to use and operate the Port of Igoumenitsa under a concession agreement with the Hellenic Republic.

The maritime supply route from Igoumenitsa to the drilling site is approximately 129.4 km, following established shipping routes via the Northern Channel of Corfu, whilst the direct helicopter route from Corfu International Airport is approximately 81.9 km. These existing supply routes minimise the need for additional infrastructure and reduce the duration and distance of support journeys compared with more remote alternatives.

<sup>4</sup> Agreement between the Hellenic Republic and the Italian Republic concerning the delimitation of their respective maritime zones, Athens, 9 June 2020. United Nations Treaty Series (UNTS), No. 57024, ratified by the Hellenic Republic by Law No. 4716/2020 (Government Gazette 163/28 August 2020) and by the Italian Republic by Law No. 93/01/07/2021 (GU 149/24 June 2021)

## 2.2 Project objective and rationale

The aim of the Project is to assess the hydrocarbon potential of the 'Asopos' structure within Block 2, through the drilling of an offshore exploration well and the necessary accompanying support activities. The Project aims to investigate an extensive, clearly defined subsurface structure identified through extensive geological and geophysical studies, including the acquisition and interpretation of modern 3D seismic data. The project focuses on the 'Asopos' structure, which covers an area of approximately 1,000 km<sup>2</sup> and represents the first offshore exploration well in Western Greece since 1981, when the 'West Katakolo' field was discovered. More broadly, this will be the first exploratory drilling operation in Greece since the Epanomi-1 onshore well was drilled in 1986. However, this drilling operation is not a new development for the wider Adriatic region, where dozens of wells have been drilled to date, several of which have led to the discovery of hydrocarbon deposits.

The primary objective of the Project is the safe and reliable assessment of the hydrocarbon potential of the Asopos area through the drilling of one (1) offshore exploration well, in full compliance with applicable environmental and regulatory requirements, as well as safety requirements. The available petroleum system studies indicate potentially favourable conditions, including mature source rocks, hydrocarbon migration pathways and the presence of suitable geological traps and sealing mechanisms. Nevertheless, the geological target has not yet been investigated by drilling and continues to be characterised by the uncertainties associated with hydrocarbon exploration at great marine depths, particularly in an area of the Ionian Sea where no exploratory drilling has previously taken place. The proposed drilling is the only appropriate next step to reduce these uncertainties, verify the existing geological model and collect well logs, samples, pressure measurements and other data that cannot be obtained solely through surface geophysical methods. The feasibility of the Project has been assessed on the basis of the available geological, geophysical, technical, operational, environmental and logistical data. Although certain key parameters regarding the prospects of the 'Asopos' require confirmation through the proposed exploratory well, the existing data provide the necessary technical and operational basis for carrying out the 'Asopos-1' offshore exploratory well in Block 2.

At EU level, the Project is consistent with the broader objectives of ensuring security of energy supply and strengthening the resilience of the energy system by improving knowledge of the potential of domestic resources within European waters. Although the project itself is a research initiative and does not prejudge the development of deposits, the data generated may, should the existence of resources be confirmed, provide crucial information for future discussions on supply diversification, the interconnectivity of regional infrastructure and long-term energy security within the European Union, with the ultimate aim of protecting European energy consumers.

The project is also of national significance, as it will be the first offshore exploratory well to be drilled in Western Greece for around four decades. The geological, geophysical and environmental data obtained during the project will be made available to the Hellenic Hydrocarbon and Energy Resources Management Company (EDEYEP), thereby contributing to the national offshore geological database and supporting future basin assessment, maritime planning and scientific research in the Ionian Sea and Western Greece.

Block 2 is characterised by a relatively high level of technical maturity, supported by modern seismic data sets and a clearly defined drilling target, whilst acknowledging that the key reservoir parameters and the



presence of hydrocarbons remain uncertain prior to drilling. The proposed exploration well under consideration is a milestone, as it marks the resumption of investment in offshore exploration wells in Greece after four decades, carried out in accordance with modern technical and environmental standards and safety protocols.

The project is being carried out by a consortium of national and international companies with proven experience in offshore operations. This collaboration offers world-class expertise in deep-water projects and reaffirms international confidence in Greece's energy sector. The Project will also result in the transfer of relevant high-resolution geological and environmental data to EDEYEP, in accordance with applicable legal and contractual provisions, creating a long-term national scientific resource for the assessment and research of the basin.

## 2.3 Compatibility of the project

### 2.3.1 Legislative framework

The Project is governed by a comprehensive framework of national, EU and international requirements concerning hydrocarbon exploration, environmental assessment, offshore safety, the prevention of marine pollution, the protection of biodiversity, waste management, cooperation and stakeholder engagement.

The legal framework for concessions and exploration activities comprises Law 2289/1995 on the exploration and exploitation of hydrocarbons, Law 4001/2011 on energy markets and hydrocarbon activities, and the Block 2 Lease Agreement ratified by Law 4525/2018.

Environmental authorisation is carried out in accordance with Law 4014/2011 and the requirements of Directive 2011/92/EU on Environmental Impact Assessment, as amended by Directive 2014/52/EU. The wider research programme was previously examined through the Strategic Environmental Assessment for the Ionian Sea, which was prepared pursuant to Directive 2001/42/EC and the corresponding national legislation. This EIA provides the project-specific assessment required for the Asopos 1 drilling operation and incorporates the findings of the updated Environmental and Social Baseline Study (ESBS), the geophysical surveys, the shallow-hazards assessment and the specialised studies.

Offshore drilling safety and the prevention of major accidents are primarily regulated by Directive 2013/30/EU and Law 4409/2016. Prior to the commencement of drilling operations, the detailed drilling programme will be submitted as part of the Notification of Well Operations procedure, whilst the mobile drilling unit (MODU) will operate in accordance with the framework set out in the Report of Major Hazards (RoMH) – RoMH), which is being prepared and submitted to EDEYEP for review and approval in accordance with Directive 2013/30/EC. It should be noted that the key findings of this report, together with the Quantitative Risk Assessment (Quantitative Risk Assessment – QRA), are included in this EIA (Chapter 9), in accordance with the requirements of Greek legislation and, in particular, Joint Ministerial Decision 170225/2014, as currently in force.

The design and execution of the works will follow recognised Good International Industry Practices (Good International Industry Practices – GIIP), Good Oilfield Practices and the relevant Best Available Techniques (BAT), including multiple well control barriers, blowout prevention equipment, emergency shutdown systems,

vessel safety measures, spill prevention measures and emergency response procedures. The protection of the marine environment encompasses the Marine Strategy Framework Directive and Law 3983/2011, the Water Framework Directive, the Environmental Liability Directive, the Waste Framework Directive, the Barcelona Convention and the Offshore Protocol, MARPOL, the Convention on Preparedness, Response and Cooperation in the Event of Oil Pollution, the Ballast Water Management Convention, SOLAS and the United Nations Convention on the Law of the Sea. Requirements relating to biodiversity include the Habitats and Birds Directives, the Convention on Biological Diversity, the Bonn and Bern Conventions, ACCOBAMS and other relevant species protection agreements. Public information and participation are addressed through the current legislation on EIA and the Aarhus and Espoo Conventions.

## 2.3.2 Spatial planning & land use

### 2.3.2.1 Spatial planning

At national level, the Project is compatible with the strategic framework governing Greece's maritime space: the National Spatial Strategy for the Maritime Space (NSSMS), approved by Council of Ministers Act (PYS) 6/17 April 2025 (Government Gazette D 227/2025), recognises offshore hydrocarbon exploration as a maritime activity that can contribute to the assessment of domestic resources and to energy security, provided that it is carried out in a manner that protects marine ecosystems, is compatible with other maritime uses and minimises environmental impacts. The 'Asopos-1' exploratory well is located within the Northern Ionian Marine Spatial Unit (Unit 4). Given that a specific Marine Spatial Planning Framework has not yet been adopted for this unit, compatibility has been assessed against the National Spatial Strategy for the Maritime Space, the applicable sectoral frameworks and the environmental conditions set out for the Ionian research programme.

The supporting onshore logistics facilities at the Port of Igoumenitsa are fully compliant with the provisions of the Regional Spatial Framework for the Region of Epirus (Government Gazette 286/AAP/28 November 2018), according to which the Port of Igoumenitsa is designated as a major international maritime gateway for Western Greece and as a strategic centre for transport, freight and logistics. The Framework promotes the diversification of port activities and specifically recognises the port's potential role in supporting hydrocarbon exploration and possible future production activities in Epirus and the Northern Ionian Sea. Consequently, the use of the port to support the 'Asopos-1' exploratory well is consistent with the approved regional spatial planning strategy and with the port's established role as a cross-border transport hub for the Adriatic-Ionian region. The Project does not require the creation of a new development area, infrastructure corridor or permanent offshore installation. The marine works will be temporary and limited to a single borehole, whilst the onshore facilities will utilise existing port and airport infrastructure. No coastal land reclamation, dredging, extension of statutory boundaries or alteration to the long-term spatial function of the Port of Igoumenitsa or Corfu International Airport is proposed. Consequently, the Project is not expected to conflict with the objectives of the General Framework for Spatial Planning (GFSP), the relevant specific spatial planning frameworks or the planning guidelines applicable to the wider coastal and marine area.

Under the Marine Strategy Framework Directive (MSFD), the proposed Asopos-1 exploratory well is located within the 'Ionian Sea and Central Mediterranean Sea' sub-region. The Greek MSFD monitoring programme

uses the nearest open-sea monitoring station, 'Othonoi (Ionian)', to support the assessment of Good Environmental Status (Good Environmental Status – GES) in the wider project area. The monitoring programme assesses relevant qualitative descriptive criteria, including biodiversity (D1), eutrophication (D5), bottom integrity (D6), hydrographic conditions (D7), pollutants (D8) and marine litter (D10).

### 2.3.2.2 Land use

The Asopos-1 exploration well is entirely offshore and does not require the occupation of any new land area or the construction of any new onshore infrastructure. During drilling, a temporary safety zone of 500 m will be maintained around the drilling unit for reasons of maritime and operational safety. This restriction will apply only whilst the drillship is on site and will be lifted upon completion of the drilling campaign. Following plugging and abandonment, the permanent physical presence will be limited to the remaining wellhead, with a footprint on the seabed of less than 1 m<sup>2</sup>; no pipelines, production facilities or other permanent subsea infrastructure will be installed.

The facilities of the onshore support base are located within the legally defined Port Zone of Igoumenitsa, which is designated as 'Port Zone B4.5' in accordance with the approved General Urban Plan of Igoumenitsa (Decision 73578/4964/17 December 2010, Government Gazette 575/AAP/31 December 2010). More specifically, the proposed facilities fall within the operational areas of Port Th6 and PA and within Building Blocks OT8 and OT7, respectively. The approved Master Plan for the Port (Ministerial Decision 8216/126/14 'Revision of the Master Plan for the Port of Igoumenitsa') permits port services, commercial activities and storage uses in these areas. Consequently, the proposed activities of temporary storage, cargo staging, logistics and vessel support are compatible with the established land-use classifications and do not require reclassification or extension beyond the controlled land port zone.

Aviation support will be accommodated within the existing Corfu International Airport (CFU). The facilities will be temporary and will not alter the existing land uses, capacity, regulatory status or primary function of the airport.

Overall, the Project concentrates its ground-based support activities within established and authorised transport infrastructure, thereby avoiding new land take and limiting potential interaction with residential, tourist, agricultural or other incompatible land uses.

### 2.3.3 Environmental sensitivity aspects of the project

The Project does not fall within any area of the Natura 2000 Network of Protected Areas, nor within any other legally designated protected area.

The nearest Natura 2000 sites to the Asopos-1 exploratory well are site GR2230010

'Marine Area of the Diapontia Islands' and GR2230008 'Diapontia Islands: Othonoi, Ereikousa, Mathraki and Vrachonissides', both approximately 41 km from the well. The nearest Natura 2000 sites to the Igoumenitsa onshore base are GR2120001 'Kalamata Estuary (Delta)' and GR2120005 'Kalamata Estuary Wetland and Prasoudi Island', approximately 3.5 km from the proposed facilities.

As part of the preparation and planning for the proposed exploratory drilling and the preparation of the Baseline Environmental and Social Study, specific environmental, geophysical and geological surveys were carried out for the Project, including a shallow-hazard survey to identify sensitive seabed habitats, geohazards, cultural heritage features and man-made infrastructure. The selected location for the exploratory well lies outside any identified sensitive seabed features and is separated from known archaeological sites, shipwreck remains and subsea cables. The deep seabed in the immediate operational area consists mainly of fine-grained deep-sea sediment, whilst no environmental or geotechnical constraints have been identified that would preclude drilling, provided that the mitigation and monitoring measures set out in the Environmental and Social Impact Assessment (ESIA) are implemented.

A detailed description of national and international protected areas, as well as the distances of the 'Asopos-1' drilling site from these, is presented in the Environmental and Social Baseline Study (ESBS), which incorporates the results of the geophysical and environmental field surveys carried out in the specific area as part of the project, and accompanies this ESIA.

The onshore support facilities are located within the existing developed Port of Igoumenitsa and do not extend into forested areas, protected natural areas or archaeological sites. The area of the onshore support base is also situated within the Potentially Significant Flood Risk Zone, known as 'Kato Rous – Delta of the Kalamas River and Coastal Zone of Igoumenitsa', as does the majority of the Port of Igoumenitsa. Consequently, flood risks as well as potential climate-related risks have been taken into account in the siting of the temporary support facilities within the area granted by OLIG to the implementing body and are being addressed through specific – site-specific – drainage, emergency preparedness and climate change adaptation measures, whilst corresponding measures are provided for in the port's current AEPO and are being implemented.

## 2.4 Technical description of the project

The 'Asopos-1' exploratory well is scheduled to be drilled in 2027, with a start window in the first quarter of 2027, subject to regulatory approvals, the contractor's availability and the project's readiness. Subject to operational, contractual and regulatory constraints, drilling is expected to commence outside the peak tourist season, where feasible.

The work will be carried out using the Stena DrillMAX mobile drilling unit (MODU), supported by maritime and aerial support services. A mobile drilling unit is a self-contained vessel specially designed for offshore drilling in deep waters, equipped with a drilling system and a 'moonpool' opening in the centre of the hull, which allows the drilling equipment to be deployed directly through the hull to the seabed.

Once the unit arrives in the operational area, drilling and related activities will be carried out continuously, 24 hours a day, 7 days a week, to ensure safe and efficient operation. The rig will remain on site only for the time required to complete the drilling, formation evaluation and, where applicable, the plugging and abandonment of the well.

The offshore exploratory drilling operation will be supported by a combination of maritime and aerial support, in conjunction with the use of an existing onshore supply base. The offshore exploratory drilling operations

will be supported by supply vessels (PSVs) which will operate between the onshore supply base at Igoumenitsa and the MODU at the

‘Asopos-1’. These vessels provide essential support and safety throughout the duration of the exploratory drilling. The activities of the support vessels will be limited to the duration of the offshore exploratory drilling. The supply vessels and helicopters supporting the Project will be temporarily chartered from third-party service providers for the duration of the exploratory drilling operation.

A remotely operated vehicle (ROV) is an unmanned, manoeuvrable underwater vehicle. The project’s ROV will be deployed and operated from the floating drilling rig via a connection and power supply cable system to provide power, control and data transmission. Its operations will be carried out at intervals throughout the drilling programme, with the aim of supporting offshore activities. The remotely operated underwater vehicle will be used to survey the seabed prior to drilling, to inspect and monitor subsea equipment such as the hoist and the blowout preventer (BOP), to provide support during well capping and abandonment, as well as for a post-operation survey to verify that the seabed has been cleared and that no debris remains prior to the removal of the platform.

The project-specific support facilities will be located within existing port and airport areas. No new permanent onshore or offshore infrastructure is required to support the proposed activities.

Offshore activities include the mobilisation of the drilling rig, the construction and evaluation of the well, the operation of support vessels and remotely operated vehicles (ROVs), standard maritime and aerial logistics operations, as well as the subsequent plugging and abandonment (P&A) of the well. Drilling operations will utilise water-based drilling fluids (WBM), with no planned use of non-aqueous drilling fluids. The MODU (Mobile Offshore Drilling Unit) will maintain its position using a dynamic positioning system, with no planned use of anchors, thereby avoiding seabed disturbance associated with anchoring.

The drilling programme has been designed to progress sequentially from the shallow formations to the planned final depth of the well, with the integrity of the well being maintained at all stages through drilling, the installation of casing, cementing and pressure control systems. The programme will be submitted to the Hellenic Hydrocarbons and Energy Resources Management Company (EDEYEP) for approval, as part of the Notification of Well Operations (NoWO), prior to the commencement of drilling.

Drilling commences with operations without a subsea riser in the shallow sections of the well, during which water-based drilling fluids are used and drill cuttings are discharged in the immediate vicinity of the well site. This stage involves the installation of the protective casing and the drilling of the upper sections of the well required to form its structure.

Following the installation of the Blowout Preventer (BOP) and the tubing for lifting cuttings and drilling fluids, drilling continues in a controlled, closed-loop environment.

The deeper sections of the borehole (17½", 12¼" and 8½") are drilled using progressively smaller sections of casing, which are installed and cemented in place at each stage to ensure zone isolation and structural stability. Drilling fluids circulate between the drill bit and the borehole. Cuttings are returned to the vessel where they are processed, whilst the fluids are treated and reused where appropriate. Drilling fluids circulate between the Mobile Offshore Drilling Unit (MODU) and the well. Drilling cuttings are returned to the MODU and processed on board, whilst the fluids are suitably treated and reused where appropriate.

Well pressure is continuously monitored and controlled through the appropriate management of the water-based drilling mud. Where required by the geological conditions encountered whilst drilling deeper formations, the Managed Pressure Drilling (MPD) technique may be used. Should abnormal pressure conditions ('kick') arise, the hydrostatic pressure of the fluid and the backpressure, where applied, will provide a margin for managing uncertainty regarding formation pressures. In the unlikely scenario of fluid inflow into the well, the aforementioned technique may be used to manage the pressure conditions within the wellbore. In the event of a well runaway incident, well control procedures will be implemented using the blowout preventer (BOP) and the relevant well control systems, in accordance with the Well Control Procedures Harmonisation Document.

In the unlikely event of failure of the primary barrier (hydrostatic pressure) and the secondary barrier (BOP), the pre-installed subsea Emergency Shut-in Device (E-SID), positioned between the wellhead and the blowout prevention system, provides an additional independent means of isolating the well. Activation of this device, in accordance with established control procedures, effectively eliminates the likelihood of the incident escalating.

Formation evaluation is carried out during and after drilling, using a combination of logging whilst drilling (Logging While Drilling – LWD), wireline logging, monitoring and analysis of drilling fluids and cuttings, and biostratigraphic analyses. These methods provide continuous geological and petrophysical data and support real-time operational decision-making. As part of wireline logging, it may be necessary to carry out a Vertical Seismic Profile (VSP). A VSP is a geophysical survey carried out within the borehole with the aim of obtaining high-resolution seismic data from the geological formation surrounding the borehole. If carried out, the VSP activity is expected to be one of the exclusively temporary sources of underwater acoustic energy associated with the drilling programme, of short duration (lasting a matter of hours and significantly shorter in duration and intensity than the 3D seismic survey carried out in the area several years ago). Overall, the drilling phase is characterised as a strictly controlled and sequentially executed activity, which incorporates multiple technical safeguards to prevent loss of well control and involves the application of established practices for managing environmental risks, particularly those relating to drilling discharges, underwater noise and emissions from logistical support activities.

#### Decommissioning and abandonment phase

Following the completion of drilling and evaluation, the well will be brought to a safe state through a permanent plugging and abandonment (P&A) programme.

Cement plugs will be installed and verified in order to isolate the relevant formations and ensure the long-term integrity of the well, in accordance with the approved drilling programme, the requirements of the Greek regulatory framework and internationally recognised best practices in the industry.

Under the current plan, the subsea wellhead will remain in place following final abandonment. All other temporary subsea equipment, including positioning transponders, will be recovered.

Once the work has been completed, an inspection will be carried out using a Remotely Operated Vehicle (Remotely Operated Vehicle – ROV) to verify the condition of the seabed, confirm that the equipment and any debris have been removed, and document the final condition of the site. Subsequently, the mobile drilling unit (MODU) and support vessels will be decommissioned and will leave the area, whilst the temporary 500-



metre safety zone will be lifted. Materials and waste returning from the offshore area will be transported via the supply base and delivered to appropriately licensed facilities.

The temporary offices, temporary storage areas, equipment and the airport hangar will be removed, whilst the areas used will be restored to the condition required by the port and airport operators.

No permanent land-based facilities, production facilities, pipelines or other infrastructure will remain as part of the Project.

## 2.5 Alternatives

### 2.5.1 Assessment of alternatives

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As part of the project's design, a detailed assessment of alternatives was carried out across a fairly broad range of design parameters and operational arrangements for the activities, with the aim of identifying the most suitable options for achieving the project's objectives, whilst minimising environmental impacts and operational risks.

The 'No-Action' alternative was also assessed, under which the drilling and all related mobilisation, drilling and support activities would not be carried out. This option would prevent the temporary environmental and social impacts of the Project; however, it would not achieve the research objectives, would not fulfil the relevant minimum work commitment, nor would it provide the necessary geological and environmental information expected from the exploratory drilling to determine whether or not hydrocarbons are present. The assessment examined reasonable alternatives for key aspects of the project, including the location of the well, the direction of drilling, the type of drill bit, the drilling strategy, the drilling fluids, cuttings management, the method of cementing the borehole, lighting of the work area, the abandonment strategy and the supporting logistics infrastructure.

Each alternative was assessed on the basis of four (4) criteria:

- Regulatory compliance – alignment with applicable legislation, licensing requirements and recognised industry standards;
- Technical feasibility – suitability of the option for safely achieving the project's objectives under the expected site conditions;
- Economic feasibility – the relative cost and operational efficiency of the alternative solution;
- Environmental compatibility – the ability to avoid or minimise environmental disturbances, emissions, waste generation and resource use.

The assessment was carried out on the basis of technical information, data, environmental parameters, operational requirements and industry experience. Where alternatives were deemed technically or regulatory unfeasible, they were excluded and not considered further.

The preferred option for each component of the project was selected on the basis that it represented the most appropriate balance between technical performance, environmental protection, operational efficiency and regulatory compliance.



Error! Reference source not found. summarises the assessment for all thematic areas (drilling location, direction, drill bit type, drilling programme, fluids, cementing, lighting, abandonment, supply chain, etc.).

**Table 2-1: Evaluation of project alternatives and options**

| AREA                          | OPTION                                                                                         | REGULATORY                     | TECHNICAL                    | FINANCIAL                    | ENVIRONMENT                  | OVERALL                                                                                                                                                                      |
|-------------------------------|------------------------------------------------------------------------------------------------|--------------------------------|------------------------------|------------------------------|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Drilling location             | 1A                                                                                             | Complies                       | Favourable                   | Favourable                   | Favourable                   | <b>Preferred</b> – optimal structural position                                                                                                                               |
|                               | 1B                                                                                             | Compliant                      | Acceptable with restrictions | Acceptable with restrictions | Favourable                   | <b>Not preferred</b> – lower reservoir quality                                                                                                                               |
|                               | Alternatives in the North                                                                      | Compliant                      | Acceptable with restrictions | Acceptable with restrictions | Favourable                   | <b>Not preferred</b> – no geological advantage                                                                                                                               |
| Drilling direction            | Vertical / low inclination                                                                     | Compatible                     | Favourable                   | Favourable                   | Favourable                   | <b>Preferred</b> – the simplest and most efficient direction                                                                                                                 |
|                               | Steep gradient                                                                                 | Compatible                     | Acceptable with restrictions | Acceptable with restrictions | Acceptable with restrictions | <b>Not preferred</b> – adds complexity                                                                                                                                       |
|                               | Horizontal                                                                                     | Compliant                      | Unfavourable                 | Unfavourable                 | Acceptable with restrictions | <b>Not preferred</b> – not favourable for research                                                                                                                           |
| Type of floating drilling rig | Dynamic positioning drilling vessel                                                            | Compliant                      | Favourable                   | Favourable                   | Acceptable with restrictions | <b>Preferred</b> – the safest solution for deep waters                                                                                                                       |
|                               | Semi-submersible drilling platform (anchored or dynamically positioned, depending on the unit) | Compliant                      | Acceptable with restrictions | Acceptable with restrictions | Acceptable with restrictions | <b>Not preferred</b> – positional stability depends on the specific unit; mooring, where required, increases the seabed footprint, which is not the case with a drilling rig |
|                               | self-elevating drilling platform                                                               | Does not comply / Not feasible | Not feasible                 | Not feasible                 | Not feasible                 | <b>Not preferred.</b> Not feasible – the water depth exceeds the operating limits of the self-elevating platform                                                             |
| Drilling strategy             | Single campaign                                                                                | Complies                       | Favourable                   | Favourable                   | Favourable                   | <b>Preferred</b> – reduced logistics                                                                                                                                         |

| AREA                | OPTION                                                                                                                   | REGULATORY                                               | TECHNICAL                    | FINANCIAL                    | ENVIRONMENT                  | OVERALL                                                                                                                               |
|---------------------|--------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|------------------------------|------------------------------|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
|                     |                                                                                                                          |                                                          |                              |                              |                              | costs and emissions                                                                                                                   |
|                     | Phased campaign                                                                                                          | Compliant                                                | Acceptable with restrictions | Acceptable with restrictions | Acceptable with restrictions | <b>Not preferred</b> – increased vessel movements                                                                                     |
| Drilling fluids     | Water-based drilling mud only                                                                                            | Complies                                                 | Favourable                   | Favourable                   | Favourable                   | <b>Preferred</b> – system with the lowest environmental risk                                                                          |
|                     | Non-aqueous-based fluids only (NADF)                                                                                     | Non-compliant / Not feasible                             | Not feasible                 | Not feasible                 | Not feasible                 | <b>Not preferred.</b><br>Not feasible – involves installation of a section without a riser pipe                                       |
|                     | Hybrid system (water-based polfoss as primary, non-aqueous drilling fluids – non-aqueous-based fluids – NADF, as backup) | Complies                                                 | Favourable                   | Acceptable with restrictions | Acceptable with restrictions | <b>Not preferred.</b><br>Not preferred – standard practice, but increases operational complexity                                      |
| Cuttings management | Water-based pulp with discharge of pulp residue into the sea                                                             | Water-based slurry with discharge of slurry into the sea | Favourable                   | Favourable                   | Acceptable with restrictions | <b>Preferred</b> – proportional to exploration volumes                                                                                |
|                     | Non-aqueous drilling fluids – NADF, with cuttings management/d isposal                                                   | Non-compliant / Not feasible                             | Not feasible                 | Not applicable               | Not applicable               | <b>Not preferred.</b><br>Not feasible – ruled out for the same reasons as the conclusion regarding non-aqueous drilling fluids – NADF |
|                     | Re-injection of cuttings and fluids at offshore installations                                                            | Complies subject to conditions                           | Not feasible                 | Not feasible                 | Not applicable               | <b>Not preferred.</b><br>Not feasible – no injection well or infrastructure                                                           |
|                     | ‘Skip-and-Ship’ method without a riser pipe                                                                              | Complies subject to conditions                           | Not feasible                 | Acceptable with restrictions | Acceptable with restrictions | <b>Not preferred.</b><br>Not feasible – the water depth exceeds the                                                                   |

| AREA                  | OPTION                                     | REGULATORY                     | TECHNICAL                    | FINANCIAL                    | ENVIRONMENT                  | OVERALL                                                                                               |
|-----------------------|--------------------------------------------|--------------------------------|------------------------------|------------------------------|------------------------------|-------------------------------------------------------------------------------------------------------|
|                       |                                            |                                |                              |                              |                              | sludge recovery capacity without a riser pipe                                                         |
|                       | 'Skip-and-Ship' method with a riser pipe   | Complies                       | Favourable                   | Acceptable with restrictions | Acceptable with restrictions | <b>Not preferred</b> – technically feasible, but the ' ' method adds unnecessary logistics procedures |
| Cementing             | Conventional cement                        | Complies                       | Favourable                   | Favourable                   | Favourable                   | <b>Preferred</b> – proven long-term integrity of the barrier                                          |
|                       | Low-carbon cement                          | Complies subject to conditions | Acceptable with restrictions | Acceptable with restrictions | Acceptable with restrictions | <b>Not preferred</b> – limited track record in deep water                                             |
|                       | Mechanical obstacles only                  | Non-compliant / Not feasible   | Not feasible                 | Not applicable               | Not applicable               | <b>Not preferred.</b> Not feasible – does not meet the requirements for a permanent manhole barrier   |
| Lighting              | Standard lighting for a floating drill rig | Complies                       | Favourable                   | Favourable                   | Acceptable with restrictions | <b>Preferred</b> – Required for navigation and aviation safety                                        |
|                       | Lighting with a modified spectrum          | Complies subject to conditions | Unfavourable                 | Acceptable with restrictions | Acceptable with restrictions | <b>Not preferred.</b> Not feasible – cannot replace mandatory lighting requirements                   |
|                       | Reduced / lack of lighting                 | Non-compliant / Not feasible   | Not feasible                 | Not applicable               | Not applicable               | <b>Not preferred.</b> Not feasible – does not comply with COLREGS/SOLAS regulations                   |
| Abandonment of a well | Keeping the wellhead in place              | Compliant                      | Favourable                   | Favourable                   | Favourable                   | <b>Preferred</b> – minimises disturbance to the seabed                                                |
|                       | Complete removal                           | Compliant                      | Favourable                   | Acceptable with restrictions | Acceptable with restrictions | <b>Not preferred</b> – additional seabed intervention                                                 |

| AREA            | OPTION                        | REGULATORY                     | TECHNICAL                    | FINANCIAL                    | ENVIRONMENT                  | OVERALL                                                                               |
|-----------------|-------------------------------|--------------------------------|------------------------------|------------------------------|------------------------------|---------------------------------------------------------------------------------------|
|                 |                               |                                |                              |                              |                              | without a clear benefit                                                               |
|                 | Do not abandon                | Non-compliant / Not feasible   | Not feasible                 | Not applicable               | Not applicable               | <b>Not preferred.</b><br>Not feasible – breach of regulations                         |
| Land-based      | Port of Igoumenitsa           | Complies                       | Favourable                   | Favourable                   | Favourable                   | <b>Preferred</b> – the nearest operational port with the lowest emissions             |
|                 | Port of Patras                | Compliant                      | Favourable                   | Acceptable with restrictions | Acceptable with restrictions | <b>Not preferred</b> – longer transport distances                                     |
|                 | Port of Thisbe                | Complies subject to conditions | Acceptable with restrictions | Unfavourable                 | Acceptable with restrictions | <b>Not preferred</b> – the candidate's availability is not guaranteed                 |
| Helicopter base | Corfu Airport                 | Complies                       | Favourable                   | Favourable                   | Favourable                   | <b>Preferred</b> – proven experience in the offshore aviation sector                  |
|                 | Alternative regional airports | Complies subject to conditions | Unfavourable                 | Not assessed in detail       | Not assessed in detail       | <b>Not preferred</b> – limited experience of helicopter operations in offshore areas  |
| Support vessels | Two (2) service vessels (PSV) | Complies                       | Favourable                   | Favourable                   | Favourable                   | <b>Preferred</b> – minimising vessel traffic and emissions                            |
|                 | Three (3) PSV vessels         | Compliant                      | Favourable                   | Acceptable with restrictions | Acceptable with restrictions | <b>Not preferred</b> – greater logistical footprint than required for this expedition |

## 2.6 Current environmental conditions

The existing environmental and social conditions in the wider project area were determined through the Environmental and Social Baseline Study (ESBS) Phase 2, supported by specialised geophysical, environmental, oceanographic, acoustic and archaeological surveys. The assessment combined current published information and official databases with primary data collected during two (2) offshore survey campaigns in March and April 2026. The surveys included high-resolution seabed mapping, geohazard assessment, water column and sediment sampling, benthic and plankton analyses, environmental DNA

sampling, current measurements, passive acoustic monitoring and visual observations of marine mammals, sea turtles and birds.

The preparation of the Environmental Impact Assessment (ESBS) is a mandatory requirement under Greek legislation, specifically Article 12.14 of the Lease Agreement, which was subsequently ratified by Law 4525/2018, requiring the documentation of the conditions of the existing environmental status prior to the commencement of offshore activities. The baseline establishes the reference conditions against which potential future environmental changes attributable to the Project can be assessed. Furthermore, it meets the baseline requirements established under the Strategic Environmental Assessment (SEA) Approval for the Ionian Sea (Approval No. 30373/03.07.2017).

Detailed offshore surveys covered the immediate vicinity of the drilling site as well as a wider survey area of approximately 100.2 km<sup>2</sup>, whilst information was utilised at a regional level where migratory species, marine activities, cumulative pressures or potential cross-border pathways required a broader spatial context. For onshore logistics facilities, the assessment took into account the existing Port of Igoumenitsa and its surrounding coastal, urban and environmental context.

## 2.6.1 Natural environment

The Asopos 1 exploration well is located in the northern Ionian Sea at a water depth of approximately 840 m. The regional climate is Mediterranean, with mild, wet winters and hot, dry summers. Winds at the well site predominantly come from the north and north-north-west, with stronger conditions occurring more frequently during the winter. The water column exhibits seasonally-driven stratification, with the main water masses in the Ionian Sea comprising the Modified Atlantic Waters in the surface layer, the Levantine Intermediate Waters at depths of approximately 150 and 500 m depth, and the Eastern Mediterranean Deep Waters below approximately 1,600 m (Schlitzer et al., 1991; Malanotte-Rizzoli et al., 1997). Ocean circulation in the northern Ionian Sea is also influenced by quasi-decadal reversals of the Northern Ionian Vortex, which affect the thermohaline characteristics of the basin (Borzelli et al., 2009; Gacic et al., 2010; Bensi et al., 2016). Below approximately 300–500 m, the water column is generally characterised by relatively uniform temperatures ranging from 13.5 °C to 15.5 °C and salinity between 37.5 and 39.5 PSU (Coll et al., 2010). The currents near the seabed measured during the survey were generally weak, usually below 0.10 m/s.

The offshore marine environment is by nature oligotrophic, with low nutrient availability and low primary productivity. Project-specific measurements indicated low turbidity, low chlorophyll concentrations and generally low nutrient levels. The temperature, salinity, pH and dissolved oxygen were consistent across all survey stations and representative of open-sea conditions in the northern Ionian Sea. The survey results did not indicate any pre-existing pollution from hydrocarbons. Detailed bathymetric mapping indicates that the seabed within the survey area slopes gradually from west to east. The drilling site is situated on a gentle seabed slope of approximately 1.3 degrees and is located within a shallow, sediment-filled trough associated with an older mass-transport deposit, thus avoiding the steeper hard-substrate ridges. The surface sediments consist mainly of homogeneous clayey silt and silty clay. Concentrations of organic carbon, nutrients and petroleum hydrocarbons are low, whilst no microplastics were detected in the analysed sediment samples. Arsenic, nickel and total chromium exceeded selected screening values at certain

stations; these concentrations form part of the site-specific baseline and were not accompanied by evidence of pollution from petroleum hydrocarbons.

Geophysical surveys and shallow-hazard geological analyses did not identify any active gas seeps, gas chimneys, active pockmarks, acoustic plumes, mud volcanoes, gas hydrates or recent fault-related seabed displacement within the immediate vicinity of the Project. No fault scarps were identified within 500 m of the drilling site. Localised acoustic wipe-out features were identified within the 500 m assessment area, starting at approximately 8 m below the seabed. The nearest anomaly detected is located approximately 243 m from the well location at an azimuth of 214°. These features may be related to fluid-related processes, including dehydration within the deformed material of the mass-transport deposit, although their exact origin cannot be confirmed from the available data. Given the gentle slopes of the seabed and the absence of evidence of recent sediment resuspension, the vulnerability of the selected site to active slope failures or submarine landslides is assessed as low. The onshore support facilities will be located entirely within the existing developed Port of Igoumenitsa. The port occupies a coastal site at a low elevation, surrounded mainly by mountainous terrain, with the exception of the eastern side, where the Ladochori plain is located. The port is adjacent to the heavily modified coastal water body 'Gulf of Igoumenitsa' (EL0512C0003H), which is characterised by good chemical status but an ecological potential below 'good' according to the 2nd Revision of the River Basin Management Plan for the Epirus River Basin District (Government Gazette A 71/17 May 2024). The onshore logistics base facilities fall within the 'Filiates-Igoumenitsa' Groundwater Body 'Filiates-Igoumenitsa' (EL050A070), which has been classified as being in good chemical and quantitative status. The nearest designated bathing waters are classified as 'Excellent Quality' according to data from the Bathing Water Register (Ministry of Environment and Energy).

The area of the onshore facilities is located within the Potentially High Flood Risk Zone (PHFRZ) with code EL05APSFR008 and named 'Lower Course and Delta of the Kalamas River and the Igoumenitsa Coastal Zone'. It is therefore likely to be affected by heavy rainfall, river or coastal flooding, as well as a potential long-term rise in sea level.

The wider Ionian region is tectonically active; however, high-resolution survey data have not identified any evidence of recent fault movement on the seabed within 500 m of the borehole. The likelihood of a tsunami occurring directly at the drilling site, or of active slope failure or seabed subsidence, is considered low.

Climate change is expected to become an increasingly significant factor in environmental change. Relevant trends include higher air and sea-water temperatures, ongoing ocean acidification, changes in species distribution, potential increases in extreme rainfall and storm intensity, and a gradual rise in sea level. The

'Asopos - 1' well is not directly exposed to coastal flooding or erosion, although changing meteorological and oceanographic conditions may affect its operational design. The low-lying port of Igoumenitsa is more directly vulnerable to coastal flooding, sea-level rise and heavy rainfall.

## 2.6.2 Biotic environment

The available literature indicates that the deep-sea benthic environment of the Eastern Ionian Sea is characterised mainly by soft-substrate habitats consisting of fine-grained silty and silty-clay sediments. Consistent with the conditions described for the eastern Ionian Sea, AUV observations and macrozoobenthic

analyses indicate that the seabed within the study area is largely homogeneous and dominated by the Mediterranean Upper Deep-Sea Mud biocoenosis (EUNIS code: ME65). This habitat is characterised by fine-grained sediments that support benthic communities adapted to deep-water conditions. Observations included evidence of burrowing and tube-dwelling organisms, occasional species of deep-sea fish of the family Macrouridae, and localised areas associated with the burrowing sea anemone *Andresia partenopea*.

A limited area of rocky substrate corresponding to the Mediterranean Upper Deep-sea Rock biocoenosis (EUNIS code: ME15) was identified at station D4a. This hard-substrate habitat supported deep-water coral assemblages associated with *Antipathella subpinnata* and/or *Callogorgia verticillata*, representing a local increase in habitat diversity within the predominantly soft-substrate deep-sea environment.

Based on the regional literature, the deep-sea benthic environment of the eastern Ionian Sea supports biological assemblages specifically adapted to oligotrophic conditions, deep-water isotherms and high salinity. The benthic communities were characterised by low abundance, reduced species richness and limited diversity, confirming the conditions typically observed in oligotrophic Mediterranean deep-sea environments. The ecosystem was dominated by the Mediterranean Upper Deep-Sea Mud biocoenosis (EUNIS code: ME65). A total of 116 individuals belonging to 19 taxonomic groups were recorded, with annelids (Annelida) overwhelmingly dominating both in abundance (94.8 per cent) and species richness (73.7 per cent). The community structure was largely dominated by the siphonophore *Golfingia* sp., a taxon usually associated with fine-grained deep-sea sediments.

The regional literature characterises the Ionian Sea as a particularly oligotrophic basin, where nutrient depletion in surface waters limits primary production and supports planktonic communities typical of open marine environments. The results of the LOT 02 survey were consistent with this regional baseline. The phytoplankton community showed significant differences between the three sampling depths (surface, mid-water and bottom), indicating that light availability is an important factor controlling its vertical distribution.

The plankton and fish communities are characteristic of an offshore oligotrophic ecosystem. Small flagellates and diatoms predominate in the phytoplankton, whilst the zooplankton is diverse but generally of low biomass, with copepods predominating. The fish plankton community comprises mainly mesopelagic and deep-sea species, with limited coastal influence. Environmental DNA, plankton sampling and visual observations confirmed the presence of pelagic and benthopelagic fish species typical of the northern Ionian Sea, including hake, anchovy, common sole, frogfish, lanternfish and deep-sea cartilaginous fish (cartilaginous fish).

The available literature and existing datasets indicate that the wider Ionian Sea and the periphery of the Hellenic Trench support a diverse assemblage of marine mammals (Notarbartolo di Sciara, 2016), although the occurrence and density of species vary spatially and temporally across the region. Documented species include deep-diving cetaceans such as the sperm whale (sperm whale, *Physeter macrocephalus*), which is classified as Endangered (EN) at the regional Mediterranean level, and Cuvier's beaked whale (*Ziphius cavirostris*), which is classified as Vulnerable (VU) (Notarbartolo di Sciara et al., 2012; Holcer et al., 2007; Thompson et al., 2023; IUCN, 2023). The area is also home to the fin whale (*Balaenoptera physalus*), the only resident baleen whale in the Mediterranean Sea, which is classified as Endangered (EN).

Furthermore, several species of dolphins are found in the area, including the striped dolphin (*Stenella coeruleoalba*), which is classified as Least Concern (LC); Risso's dolphin (*Grampus griseus*), which is



classified as Endangered (EN); the short-beaked common dolphin (*Delphinus delphis*), which is classified as Endangered (EN); the common bottlenose dolphin (*Tursiops truncatus*), classified as Vulnerable (VU); and the rough-toothed dolphin (*Steno bredanensis*), classified as Near Threatened (NT) (Bearzi et al., 2011; Carlucci et al., 2017; IUCN, 2023).

Records of the Mediterranean monk seal (*Monachus monachus*), classified as Endangered (EN), are also available from the wider region (Notarbartolo di Sciara et al., 2009; IUCN, 2023). These species are subject to strict protection under Annex IV of the EU Habitats Directive (Council Directive 92/43/EEC). Furthermore, the Mediterranean monk seal (*Monachus monachus*) is listed in Annex II of the Directive, requiring the designation of Special Areas of Conservation. Cetacean species are also covered by relevant international conservation agreements, including ACCOBAMS, the Bern Convention, CITES and the Convention on Migratory Species (CMS), whilst the Mediterranean monk seal is protected under relevant international conservation frameworks, including the Bern Convention, CITES and the CMS.

Specific marine fauna surveys were carried out during both the LOT 01 and LOT 02 campaigns to record the presence of marine mammals. These surveys also supported the implementation of research mitigation measures in accordance with ACCOBAMS guidance.

The nearest Natura 2000 sites to the Asopos-1 exploration well location are the Diapontia Islands Marine Special Area of Conservation (SAC) (GR2230010) and the Diapontia Islands: Othonoi, Ereikousa, Mathraki and the islets, Special Protection Area (SPA) (GR2230008), both located approximately 41 km north-east of the Project.

The location of the 'Asopos-1' exploration well is within the Ecologically or Biologically Significant Marine Area (EBSA) South Adriatic-Ionian Strait, within which the 'Asopos-1' exploration well is situated. The area encompasses the transition zone between the southern Adriatic Sea and the northern Ionian Sea, including the Strait of Otranto, with water depths ranging from approximately 200 m to 1,500 m. These areas are not legally designated protected areas, but they confirm the wider ecological importance of the region.

The nearest officially designated Important Marine Mammal Area (IMMA) is the 'Ionian Archipelago', approximately 37 km east of the drilling site, whilst the nearest Important Shark and Ray Area (ISRA) is 'Santa Maria di Leuca', approximately 20 km west-south-west.

The proposed areas for the onshore support base are confined to the existing port area of Igoumenitsa Port and do not extend into forests, protected natural areas or designated habitats. The nearest Natura 2000 sites are GR2120001 'Kalamata Estuary (Delta)' and GR2120005

'Kalamata Estuary Wetland and Prasoudi Island', both approximately 3.5 km from the land base. The nearest wildlife refuge is K237 'Varathi', approximately 2 km north of the port, whilst the nearest designated Area of Outstanding Natural Beauty is the Kalamata Estuary, approximately 6.5 km away. As the facilities will remain within the port's existing built-up area, no immediate loss or fragmentation of natural habitat is expected.

Anthropogenic environment

The offshore area around the 'Asopos-1' borehole is mainly used for commercial shipping, fishing and subsea telecommunications infrastructure. The well site is located near, but outside, the main shipping lanes with the highest traffic density, whilst fishing activity takes place in the wider area. Within 100 km of the drilling

site, there are no operational offshore oil and gas installations, aquaculture facilities or renewable energy installations.

Submarine telecommunications cables are present in the wider area, with the nearest operational cable located approximately 2.7 km from the well. Planned offshore wind projects have been identified in neighbouring Italian waters, which are considered part of the wider cumulative development framework, although they are currently at the planning and licensing stage, whilst for the Greek Offshore Wind Farm Programme, which identifies areas suitable in principle for the development of Integrated Offshore Wind Farm Development Areas (POAYAP), the Joint Ministerial Decision for its approval is currently pending

The main onshore areas associated with the Project are Corfu and Igoumenitsa. Corfu's economy is based largely on tourism, whilst Igoumenitsa is an important port and logistics hub linking Western Greece with Italy and the Adriatic region. The project will utilise existing port and airport infrastructure and will not require land acquisition, physical relocation of the population or changes to land use.

The northern Ionian Sea and the Strait of Otranto are of archaeological interest due to their long maritime history. No archaeological features were identified at the drilling site. An archaeological feature (T057), interpreted as an ancient merchant shipwreck, was identified 8.6 km north of the proposed drilling site at a water depth of 880.04 m. However, the drilling site and the operational area are separated from this and from the other identified archaeological features. Existing anthropogenic pressures in the area include shipping, fishing, underwater noise, ship emissions, marine litter and port-related activities. Marine litter at the drilling site was found to be limited, whilst the underwater acoustic environment is characteristic of a marine area with moderate traffic. The Port of Igoumenitsa is already an established transport and logistics hub, with existing road network, wastewater management and waste management infrastructure.

Without the Project, the area is expected to continue to be affected by existing maritime, fishing and port activities, as well as by future regional developments, such as offshore renewable energy projects. Given the temporary nature of the drilling, the Project is not expected to affect the long-term socio-economic or spatial development of the area.

## 2.7 Quantitative Risk Assessment (QRA)

A Quantitative Risk Assessment (Quantitative Risk Assessment – QRA) was carried out for the 'Asopos-1' exploratory well, with the primary aim of assessing the risk to personnel from the identified Major Accident Hazards (MAH), as well as identifying major accident scenarios with environmental consequences. The assessment was based on the existing QRA prepared by the internationally recognised classification and certification body, DNV for the Stena DrillMAX floating drilling unit, and is included in the Major Hazards Report (RoMH) submitted to the Hellenic Authority for the Assessment of Major Accident Hazards (EDEYEP) (Ref. No.: 36452/14 July 2026), adapted to the specific conditions and duration of the 'Asopos-1' exploratory well.

As part of the QRA, the main MAHs associated with the operation of the Floating Drilling Unit were identified and assessed, including blowouts and leaks from the well, fires, explosions and releases of toxic substances, maritime incidents such as ship collisions, loss of position or stability, structural failure and falling objects, as well as workplace accidents and risks associated with the transport of personnel by helicopter. The risk

levels were compared with the applicable risk acceptance criteria of the Hellenic Civil Aviation Authority (HCAA) and assessed in accordance with the ALARP principle.

The risk assessment for personnel conservatively maintained the release frequencies and consequences used in the existing QRA for the Stena DrillMAX. The calculated Individual Risk Per Annum (IRPA) values are  $4.50 \times 10^{-5}$  per year for the operations personnel group,  $4.47 \times 10^{-5}$  per year for the maintenance staff group and  $2.59 \times 10^{-5}$  per year for the accommodation staff group. The maximum IRPA value,  $4.50 \times 10^{-5}$  per year, is lower than the EDEYEP tolerance limit of  $1.0 \times 10^{-3}$  per year. The total Potential Loss of Life (PLL) is estimated at  $5.93 \times 10^{-0}$  deaths per year.

The calculated Fatal Accident Rate (FAR) associated with the facility, excluding helicopter transport, amounts to 2.16 deaths per  $10^8$  hours of exposure, a figure that is also lower than the Project's acceptance criterion of 10 fatalities per  $10^8$  hours of exposure. Transport by helicopter was assessed separately on the basis of actual hours of exposure during the flight and, due to the different normalisation, the corresponding FAR value is not directly comparable with the acceptance criterion applied to the installation. The risk associated with helicopter transport is included, however, in the IRPA and PLL results; in any case, the risk to personnel is primarily associated with helicopter transport and conventional workplace accidents, whilst the contribution of scenarios linked to accidents on the floating drilling unit (MODU) is comparatively limited.

Of particular importance for the 'Asopos-1' exploratory well 'Asopos-1' is the use of the K-BOS (Emergency Shut-In Device (E-SID)) immediate flow-shut-off device, which will be installed as a pre-positioned subsea device between the wellhead and the Blowout Preventer (BOP). The E-SID operates in conjunction with the conventional well control barriers and the BOP system.

The project-specific probabilistic reliability assessment shows that the combined BOP and E-SID arrangement reduces the estimated probability of an uncontrolled blowout from  $1.20 \times 10^{-4}$  to approximately  $2.08 \times 10^{-8}$ . Consequently, a prolonged uncontrolled subsea discharge is not adopted as a representative environmental scenario for a loss of contents from 'Asopos-1'. The E-SID system constitutes an additional risk mitigation measure and supports the conclusion that the risk associated with well control has been reduced in accordance with the ALARP (As Low As Reasonably Practicable) principle.

The risks associated with the drilling of the single exploratory well 'Asopos-1' were compared with the base case scenario of the existing QRA for the Stena DrillMAX Floating Drilling Unit, which covers four HPHT exploration wells per year based on the unit's historical operation. The project-specific assessment presents an even lower risk profile than the rig's already low profile, mainly due to the reduced scope of operations, the shorter duration of exposure and the lower relief flow rate. This comparison constitutes a sensitivity analysis rather than a 'like-for-like' comparison between identical drilling programmes.

**Table 2-2: Sensitivity analysis Comparison**

| PARAMETER                    | BASE CASE – HPHT EXPLORATION CAMPAIGN | PROPOSED EXPLORATION WELL   | COMMENTS                                                                                                                   |
|------------------------------|---------------------------------------|-----------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Number of boreholes examined | 4 HPHT exploration wells per year     | 1 exploration well per year | Reduced frequency of exposure due to the operation of a single well, which helps to reduce individual and collective risk. |

| PARAMETER                            | BASE CASE – HPHT EXPLORATION CAMPAIGN | PROPOSED EXPLORATION WELL               | COMMENTS                                                                                                                                                                                                          |
|--------------------------------------|---------------------------------------|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Water depth                          | 500–2,000 m                           | 840 m                                   | Asopos-1 is located at a depth of over 500 m, which is considered deep water and is consistent with the basis of the existing QRA. In shallower waters, the consequences of subsea blowouts would be more severe. |
| Discharge rate                       | Total discharge flow rate 260 kg/s    | Oil – 14 kg/sec;<br>Gas – 79 kg/sec     | This scenario assumes a lower probability of hydrocarbon reservoir leakage compared with the full flow rate used in the base case scenario, thereby reducing the severity of the consequences.                    |
| Total number of workers at risk      | 180                                   | 60, with the figure likely to reach 180 | The total exposure of the group at risk will vary depending on the number of people present.                                                                                                                      |
| Individual risk per annum (IRPA)     | $1.84 \times 10^{-4}$ per year        | $4.50 \times 10^{-5}$ per year          | Reduction in individual risk of approximately 75%.                                                                                                                                                                |
| Probable loss of life (PLL)          | $5.26 \times 10^{-2}$ deaths/year     | $5.93 \times 10^{-3}$ deaths/year       | Approximately 89% lower than the PLL for the reference case, based on the assumptions regarding personnel and exposure used in the QRA for this specific project                                                  |
| Transient Refuge (TR) loss frequency | $6.77 \times 10^{-6}$ per year        | $1.05 \times 10^{-6}$ per year          | Approximately 84% lower than the TR loss rate in the reference case, reflecting the reduced exposure during the exploratory drilling and the assessment assumptions specific to the project.                      |

As shown in Table 2-2, compared with the base case of the four HPHT exploration wells, the Individual Risk per Annum (IRPA) decreases from  $1.84 \times 10^{-4}$  to  $4.50 \times 10^{-5}$  per annum, the Potential Loss of Life (PLL) from  $5.26 \times 10^{-2}$  to  $5.93 \times 10^{-3}$  deaths per year, and the frequency of loss of the Temporary Refuge (TR) from  $6.77 \times 10^{-6}$  to  $1.05 \times 10^{-6}$  per year. These changes correspond to reductions of approximately 75 per cent, 89 per cent and 84 per cent respectively, and primarily reflect the reduced duration and extent of the campaign, as well as the project-specific exposure assumptions.

At the same time, the integrity of the Main Safety Functions was assessed. The calculated loss frequency of the TR is  $1.05 \times 10^{-6}$  per year, whilst the calculated loss frequencies of the Key Safety Functions remain below the applicable acceptance criteria. Therefore, the results confirm that the proposed activity remains within the established safety baseline for the Stena DrillMAX.

Apart from the potential impact on personnel, major accidents may affect environmental and socio-economic receptors through the accidental release of liquid hydrocarbons into the sea. For this reason, a detailed numerical modelling study of an oil spill. Given the installation of the K-BOS immediate flow-shut-off system, which reduces the already low (of the order of  $10^{-4}$ ) probability of an uncontrolled blowout by a factor of two, resulting in an estimated probability of an uncontrolled blowout of  $2.08 \times 10^{-8}$ . As the most representative accidental release scenario for the purposes of the EIA, an instantaneous loss of 350 m<sup>3</sup> of Marine Gas Oil (MGO) from the fuel tank of a (Platform Supply Vessel – PSV) supporting the drilling campaign. This quantity corresponds to approximately 30–40% of the fuel tank of a typical PSV, whilst the corresponding fuel tanks of large cruise ships passing through the Northern Ionian Sea are at least ten times larger,

The modelling assessed the transport and dispersion of the spill in the complete absence of any mitigation measures, i.e. without any detection, containment, recovery or other response actions taking place whatsoever (conservative scenario). According to the model's results, after 30 days only 0.2% of the total quantity will remain on the sea surface, whilst the majority will have evaporated (56.5%) or will remain dispersed in the water column (28.9%). Furthermore, 8.8% is predicted to have undergone biodegradation, 0.4% to have reached the seabed and 5.2% to have reached the shoreline. The results demonstrate that the behaviour of MGO is characterised primarily by rapid decomposition and dispersion.

As mentioned above, the modelling results represent a conservative estimate (i.e. the most pessimistic scenario), given that they do not take into account response and clean-up measures, such as containment, recovery and measures to protect the coastline, which in a real-life scenario could further reduce the extent and duration of the oil spill.

The assessment also examined the Escape, Evacuation and Rescue (Escape, Evacuation and Rescue – EER) of the Stena DrillMAX, as well as the capacity of the Totally Enclosed Motor Propelled Survival Craft (TEMPSC). Specifically, the capacity of the TEMPSCs has been reduced from 60 to 54 persons, and an additional TEMPSC with a capacity of 60 persons has been installed at the stern of the drilling vessel. This arrangement ensures that the complete evacuation of personnel remains feasible even in the event of the loss of evacuation means on one side of the vessel.

Although a prolonged, uncontrolled subsea blowout is not considered a representative environmental scenario for the exploratory drilling operation, the planned emergency control arrangements for the wellhead will be maintained. These include intervention in the Blowout Preventer (BOP) via secondary control systems, standby activation of the E-SID, capping the well, containment and planning for a relief well.

Overall, the QRA confirms that the risks associated with the proposed exploratory well

‘Asopos-1’ are lower than those of the conservative base case for the Stena DrillMAX and meet the applicable risk acceptance criteria. The implementation of existing safety measures, in conjunction with project-specific measures – and in particular the K-BOS E-SID – demonstrates the reduction of risks in accordance with the ALARP principle. The assumptions regarding the number of persons on board (POB), the distribution of personnel and exposure from helicopter transport will be verified against the final staffing and logistics support plan prior to the commencement of works, and the risk results will be reviewed in the event of material discrepancies.

## 2.8 Assessment and evaluation of environmental and social impacts

### 2.8.1 Identification and assessment of significant environmental parameters

The Environmental and Social Impact Assessment (ESIA) process initially requires the classification of the parameters of the natural and man-made environment affected by the impacts into significant or noteworthy elements, defined as Significant Environmental Parameters (SEPs). An SEP is defined as any element of the natural and man-made environment considered significant by the parties involved in the assessment, authorisation and implementation of the project under consideration (project promoter, competent

authorities and agencies, consultants, other parties directly or indirectly involved in or affected by the project's implementation, etc.).

The SPPs are categorised taking into account their environmental value, as derived from the data presented in Chapter 8 of the Current State of the Environment, and – where possible – their sensitivity to the project's activities.

On this basis, the SPPs are categorised as Low, Medium and High Significance. The significance of each EPI is taken into account as a weighting factor in the final weighting of impacts during the EIA process, as described in Section 10.1.1.3.2. In this way, the same impact is ultimately assessed as more significant in relation to a High-Significance Environmental Parameter than in relation to a Low-Significance Environmental Parameter.

**Table 2-3: Identification and Assessment of Significant Environmental Parameters in the study area**

| SIGNIFICANT ENVIRONMENTAL PARAMETER (SEP)                   |                                      | SIGNIFICANCE OF SEM | ASSESSMENT                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------|--------------------------------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Climatic and bioclimatic characteristics                    | Climate, microclimate and bioclimate | Moderate            | The climate and weather conditions are important factors affecting the safety of drilling operations, the movement of vessels, helicopter flights and the planning of emergency response measures, as well as the overall operation of the Project. However, the temporary offshore drilling campaign is not expected to cause any measurable changes to the regional climate, the microclimate or bioclimatic conditions.                    |
|                                                             | Climate change                       | High                | Climate change is an extremely important environmental factor due to the contribution of greenhouse gas emissions from the mobile offshore drilling unit (MODU), support vessels and helicopter flights. Although emissions from the Project are temporary and of limited duration, they contribute cumulatively to a global environmental issue of international significance and are therefore considered a factor of very high importance. |
| Morphological and topological characteristics               | Morphology                           | Moderate            | The morphology of the seabed is a significant receptor, as drilling activities involve direct interaction with the seabed at the drilling site. However, the impacts are expected to be largely localised and temporary, with no dredging, backfilling, use of an anchoring system or permanent alteration to the morphology of the seabed or the coastal zone.                                                                               |
|                                                             | Landscape                            | Low                 | The drilling site is located approximately 44 km offshore and no permanent structures will be installed, either offshore or onshore. The visual impacts associated with the Mobile Offshore Drilling Unit (MODU), support vessels and helicopter movements will be temporary and largely confined to distant sea views offshore, resulting in limited interaction with landscape receptors.                                                   |
| Geological, tectonic and soil characteristics of the seabed | Geology and slope stability          | Moderate            | The Project involves drilling through geological formations and, as such, interacts directly with the subsoil. However, the impacts are limited to a very small area around the borehole and no significant change in the geological conditions of the wider area is expected.                                                                                                                                                                |
|                                                             | Tectonics and seismicity             | Moderate            | The Project is located in a seismically active area of the Eastern Mediterranean, which makes seismicity an important factor for design and safety. However,                                                                                                                                                                                                                                                                                  |



| SIGNIFICANT ENVIRONMENTAL PARAMETER (SEP) |                                                   | SIGNIFICANCE OF SEM | ASSESSMENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------------------|---------------------------------------------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                           |                                                   |                     | drilling operations are not expected to trigger seismic events.                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                           | Soil                                              | Low                 | No use of land, excavation or ground intervention is required, as the Project is entirely offshore and supported by existing infrastructure.                                                                                                                                                                                                                                                                                                                                                      |
|                                           | Seabed                                            | Moderate            | The installation and operation of the well, the discharge of permitted materials associated with the well, and the presence of the BOP system and the riser, interact directly with the seabed environment, although the impacts are expected to be localised and temporary.                                                                                                                                                                                                                      |
| Terrestrial habitats                      | Terrestrial habitats – vegetation                 | Low                 | No vegetation clearance, land occupation or disturbance of terrestrial habitats is required.                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                           | Terrestrial fauna (excluding birdlife)            | Low                 | No direct interaction with terrestrial fauna is expected due to the absence of new terrestrial infrastructure.                                                                                                                                                                                                                                                                                                                                                                                    |
| Marine habitats                           | Marine habitats – underwater vegetation and flora | Moderate            | Marine habitats are a sensitive environmental receptor, as drilling activities take place within the marine environment and may cause localised disturbance to the seabed and temporary changes in water quality.                                                                                                                                                                                                                                                                                 |
|                                           | Marine fauna                                      | High                | Marine mammals, sea turtles, fish and other marine species are among the most sensitive receptors that may be affected by ship traffic, underwater noise, lighting and any accidents.                                                                                                                                                                                                                                                                                                             |
| Birdlife                                  | Birdlife                                          | Moderate            | Seabirds and migratory bird species may be affected by lighting from ships and the Mobile Offshore Drilling Unit (MODU), as well as by helicopter flights; however, the impacts are expected to be temporary and localised.                                                                                                                                                                                                                                                                       |
| Protected areas                           | Protected areas                                   | High                | The wider study area includes international, European and national protected areas and protected species, a fact which makes these protected areas extremely sensitive environmental receptors, despite the offshore location of the drilling site. However, the drilling site is located tens of kilometres away from protected areas.                                                                                                                                                           |
|                                           | Forests and woodland areas                        | Low                 | No interaction with forested areas is anticipated.                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                           | Other significant natural areas                   | High                | The wider area contains ecologically significant marine and coastal areas, which may be home to protected species and habitats.                                                                                                                                                                                                                                                                                                                                                                   |
| Anthropogenic environment                 | Spatial planning and land use                     | Moderate            | Plot 2 does not contain any permanent settlements or land uses, whilst land-based activities are limited to the existing operational facilities at the Port of Igoumenitsa and Corfu International Airport, without any land take or change in land use. However, the Project is directly related to the Regional Spatial Planning Framework for the Ionian Islands, which identifies offshore hydrocarbon exploration as an activity of national importance subject to environmental safeguards. |
|                                           | Marine uses                                       | High                | The wider study area is characterised by intensive marine uses, including commercial shipping, fishing, subsea cables, aquaculture, tourism and recreation. Shipping and commercial fishing have the greatest spatial interaction with the Project due to the temporary exclusion zone for safety reasons and the movements of support vessels, making marine uses an extremely important environmental receptor.                                                                                 |
|                                           | Structure and functions of the                    | Low                 | The Project's activities are confined to existing port and airport facilities and do not require new                                                                                                                                                                                                                                                                                                                                                                                              |



| SIGNIFICANT ENVIRONMENTAL PARAMETER (SEP) |                                                                           | SIGNIFICANCE OF SEM | ASSESSMENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------------------|---------------------------------------------------------------------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                           | man-made environment                                                      |                     | infrastructure, land take or permanent land occupation. Consequently, no fragmentation of the settlement structure, the urban fabric or existing land uses is anticipated.                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                           | Cultural heritage                                                         | High                | The project area is situated within a zone of recognised marine archaeological significance, and marine surveys have identified a feature interpreted as a probable ancient shipwreck (Target T057) within the survey area, 8.6 kilometres from the drilling site. Although terrestrial cultural heritage sites are located outside the project area, the possible presence of an underwater cultural heritage feature makes this area extremely sensitive, requiring mitigation and protection measures.                                                                                           |
| Socio-economic environment                | Economic activities                                                       | High                | The Project interacts with regional economic activities, in particular commercial fishing, tourism, port services, logistics and local supply chains. The Project has the potential to make a positive contribution to the Greek economy through investment, employment, procurement and increased demand for local and regional goods and services.                                                                                                                                                                                                                                                |
|                                           | Community health and safety                                               | High                | Community health and safety are extremely important factors, given the presence of existing settlements and active transport infrastructure, including the existing airport, port and maritime traffic. The Project will interact with these existing transport activities through the port logistics base, helicopter flights and the movements of the floating drilling unit as well as support vessels. However, the offshore location of the drilling site is approximately 44 km from the nearest communities, thereby limiting the likelihood of direct interaction with the wider community. |
| Social infrastructure                     | Social infrastructure                                                     | Low                 | The Project will use existing health and emergency services only occasionally and does not require the construction of new social infrastructure or the expansion of existing facilities. Demand on the existing capacity of these services is expected to be negligible.                                                                                                                                                                                                                                                                                                                           |
| Technical infrastructure                  | Maritime infrastructure / Navigation infrastructure                       | High                | The project area is situated within active offshore navigation routes in the Ionian Sea. The temporary establishment of a 500-metre safety zone around the floating drilling unit, as well as the increased traffic of support vessels (PSVs), poses a risk of interference with commercial shipping routes. However, the impacts are temporary, limited to the local area and are managed through the established maritime safety procedures (such as NAVTEX, Notices to Mariners and support from vessels, where available).                                                                      |
|                                           | Other transport infrastructure (road, port, airport, logistics corridors) | Moderate            | The Project utilises existing land-based infrastructure, including the Port of Igoumenitsa and Corfu International Airport, without requiring any new construction or expansion of their capacity. The interactions are operational and temporary, and relate to crew transport, the supply chain and mobilisation/demobilisation activities.                                                                                                                                                                                                                                                       |
|                                           | Energy and telecommunications infrastructure                              | Low                 | The Project utilises existing onshore energy and telecommunications infrastructure, without requiring any expansion of capacity.                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                           | Environmental infrastructure                                              | Moderate            | The Project will not rely on municipal or port waste and sewage management services for the treatment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

| SIGNIFICANT ENVIRONMENTAL PARAMETER (SEP) |                                                       | SIGNIFICANCE OF SEM | ASSESSMENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------|-------------------------------------------------------|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                           | (waste, sewage, spill response, reception facilities) |                     | or disposal of waste and sewage. Instead, waste requiring transport to shore will be transported directly via the onshore support base to authorised regional facilities, in accordance with the Project's Waste Management Plan and applicable national legislation. Wastewater generated on the floating drilling unit and the Project's vessels will be managed by the relevant operating body in accordance with applicable maritime requirements, vessel-specific systems and the Project's environmental requirements. |
| Atmospheric environment                   | Air quality                                           | Moderate            | Emissions from the floating drilling unit, support vessels and helicopters will occur throughout the drilling phase and constitute one of the project's main operational interactions with the environment. However, the impacts are expected to be temporary and to be dispersed across the offshore area.                                                                                                                                                                                                                  |
| Acoustic environment                      | Ambient noise                                         | Moderate            | Noise will be generated by drilling operations, vessels and helicopters, but the impacts will be temporary and largely confined to workers in the offshore area and to those passing through this maritime area.                                                                                                                                                                                                                                                                                                             |
|                                           | Underwater noise                                      | High                | Underwater noise is a key environmental impact factor due to the presence of marine mammals, sea turtles, fish and other species of sensitive marine fauna in the wider Ionian Sea region.                                                                                                                                                                                                                                                                                                                                   |
|                                           | Vibrations                                            | Low                 | The impacts of drilling-related vibrations are expected to remain locally confined to the immediate vicinity of the drilling site and are not anticipated to affect receptors in the wider area.                                                                                                                                                                                                                                                                                                                             |
|                                           | Electromagnetic radiation                             | Low                 | The Project does not involve any significant sources of electromagnetic emissions beyond the standard communications and operational equipment used at offshore installations.                                                                                                                                                                                                                                                                                                                                               |
| Water                                     | Seawater                                              | High                | Seawater is a primary environmental receptor due to the offshore nature of the Project and the possibility of operational discharges, accidental spills and interactions with the quality of marine waters.                                                                                                                                                                                                                                                                                                                  |
|                                           | Surface waters                                        | Low                 | No direct interaction with surface waters is anticipated, as no new onshore infrastructure or freshwater abstraction is required.                                                                                                                                                                                                                                                                                                                                                                                            |
|                                           | Groundwater                                           | Low                 | Due to the offshore location of the Project and the absence of onshore construction activities, no direct impact on groundwater resources is expected.                                                                                                                                                                                                                                                                                                                                                                       |

## 2.8.2 Assessment of potentially significant impacts from the normal / routine activities of the project

This section summarises the environmental and social impacts arising from the normal (routine) operation of the Project. The summary is based on the detailed assessments presented in the previous sections and sets out the relative significance of the impacts and the residual significance following the implementation of the proposed mitigation measures.

Table 2-4: Summary of impacts from the normal/routine operation of the project

| Environmental & Social Parameters             | Valued Receptors         | Project Activities / Elements                                                                                                   | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|----------------------------------|
| Drilling Preparation and Mobilisation Phase   |                          |                                                                                                                                 |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |                                  |
| Climate Resilience                            | Microclimate             | Mobilisation of MODU to well site – power generation                                                                            | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 1           | 1                | 2             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          | NEGLIGIBLE                       |
| Morphological and Topological Characteristics | Morphology               | Onshore utility connection works                                                                                                | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          | NEGLIGIBLE                       |
| Morphological and Topological Characteristics | Landscape                | Installation of wharf crane (if applicable), utility connections, prefabricated office units, welfare and sanitation facilities | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Low                        | NEGLIGIBLE          | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Geology                  | Onshore utility connection works                                                                                                | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Slope stability          | Onshore utility connection works                                                                                                | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Soil                     | Onshore base equipment and utilities installation                                                                               | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Low                        | NEGLIGIBLE          | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Soil                     | Onshore loading/unloading or staging                                                                                            | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 1                 | 21                    | Low        | Low                        | NEGLIGIBLE          | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Seabed / Sediment        | Mobilisation of MODU to well site – power generation                                                                            | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 21                    | Low        | Medium                     | MINOR               | MINOR                            |
| Biotic Environment                            | Benthic fauna / habitats | Mobilisation of MODU to well site – power generation                                                                            | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 1                | 1             | 4                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          | NEGLIGIBLE                       |
|                                               | Marine Mammals           | Mobilisation of MODU to well site – power                                                                                       | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               | MINOR                            |

| Environmental & Social Parameters | Valued Receptors | Project Activities / Elements                                                              | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|------------------|--------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
|                                   |                  | generation (direct spatial disturbance)                                                    | -          |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |
|                                   | Marine Mammals   | Mobilisation of MODU to well site – power generation (direct underwater noise disturbance) | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
|                                   | Marine Mammals   | Mobilisation of MODU to well site – power generation (indirect impacts)                    | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | Mobilisation of MODU to well site – power generation (direct spatial disturbance)          | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | Mobilisation of MODU to well site – power generation (direct underwater noise disturbance) | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | Mobilisation of MODU to well site – power generation (indirect impacts)                    | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Fish fauna       | Mobilisation of MODU to well site – power generation (direct spatial disturbance)          | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Fish fauna       | Mobilisation of MODU to well site – power generation (direct UWN)                          | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Fish fauna       | Mobilisation of MODU to well site – power generation (indirect impacts)                    | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Avifauna         | Mobilisation of MODU to well site – power generation (collisions)                          | -          | 2              | 8           | 4           | 2                | 1                  | 2            | 4           | 1                | 3             | 1                 | 40                    | Low                        | Medium              | MINOR                            |
|                                   | Avifauna         | Mobilisation of MODU to well site – power generation (increased                            | -          | 2              | 8           | 4           | 2                | 1                  | 2            | 4           | 1                | 3             | 1                 | 40                    | Low                        | Medium              | MINOR                            |

| Environmental & Social Parameters | Valued Receptors               | Project Activities / Elements                                                              | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |            |
|-----------------------------------|--------------------------------|--------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|------------|
|                                   |                                | energy cost/ exhaustion/ starvation)                                                       |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |            |
|                                   | Avifauna                       | Mobilisation of MODU to well site – power generation (resting/ roosting sites)             | +          | 2              | 8           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 37                    | Low                        | Medium              | POSITIVE                         | POSITIVE   |
|                                   | Protected Areas                | Mobilisation of MODU to well site – power generation (direct underwater noise disturbance) | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR      |
|                                   | Other important natural areas  | As per marine mammals, sea turtles and fish fauna                                          |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |            |
| Anthropogenic Environment         | Spatial Planning and Land Use  | Install temporary fencing around entire base perimeter                                     | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | Medium              | NEGLIGIBLE                       | NEGLIGIBLE |
| Anthropogenic Environment         | Spatial Planning and Land Use  | Mobilise wharf crane to designated crane area                                              | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       | NEGLIGIBLE |
| Anthropogenic Environment         | Spatial Planning and Land Use  | Install wharf crane (if applicable)                                                        | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       | NEGLIGIBLE |
| Anthropogenic Environment         | Spatial Planning and Land Use  | Install utility connections                                                                | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | Medium              | NEGLIGIBLE                       | NEGLIGIBLE |
| Anthropogenic Environment         | Spatial Planning and Land Use  | Install prefabricated office units, welfare and sanitation facilities                      | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | Medium              | NEGLIGIBLE                       | NEGLIGIBLE |
| Anthropogenic Environment         | Spatial Planning and Land Use  | Onshore loading/unloading or staging                                                       | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       | NEGLIGIBLE |
| Anthropogenic Environment         | Maritime uses                  | Mobilise wharf crane to designated crane area                                              | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            | MINOR      |
| Anthropogenic Environment         | Maritime uses                  | Install wharf crane (if applicable)                                                        | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            | MINOR      |
| Anthropogenic Environment         | Maritime uses                  | Onshore loading/unloading or staging                                                       | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            | MINOR      |
| Anthropogenic Environment         | Maritime uses                  | Mobilisation of MODU to well site – power generation                                       | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            | MINOR      |
| Anthropogenic Environment         | Structure and Functions of the |                                                                                            |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |            |

| Environmental & Social Parameters | Valued Receptors          | Project Activities / Elements                                         | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|---------------------------|-----------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
|                                   | Anthropogenic Environment |                                                                       |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |
| Anthropogenic Environment         | Cultural Heritage         |                                                                       |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |
| Socio-economic environment        | Economic activities       | Mobilisation (recruitment, employment, labour force)                  | +          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 25                    | Low                        | High                | POSITIVE                         |
| Socio-economic environment        | Economic activities       | Supply chain and procurement                                          | +          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 2                | 1             | 1                 | 26                    | Low                        | High                | POSITIVE                         |
| Socio-economic environment        | Economic activities       | Mobilise wharf crane to designated crane area                         | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Economic activities       | Install wharf crane (if applicable)                                   | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Economic activities       | Onshore loading/unloading or staging                                  | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Economic activities       | Install temporary helicopter hangar at Corfu                          | +          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 1                | 1             | 1                 | 17                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Economic activities       | Mobilisation of MODU to well site                                     | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 18                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S             | Install temporary fencing around entire base perimeter                | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S             | Install signage and directional markings                              | +          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | POSITIVE                         |
| Socio-economic environment        | Community H&S             | Mobilise wharf crane to designated crane area                         | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S             | Install wharf crane (if applicable)                                   | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S             | Install utility connections                                           | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S             | Install prefabricated office units, welfare and sanitation facilities | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S             | Onshore loading/unloading or staging                                  | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S             | Install temporary helicopter hangar at Corfu                          | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S             | Mobilisation of MODU to well site – power generation                  | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |

| Environmental & Social Parameters           | Valued Receptors                            | Project Activities / Elements                        | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |            |
|---------------------------------------------|---------------------------------------------|------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|------------|
| Social Infrastructure                       | Social Infrastructure                       |                                                      |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |            |
| Technical Infrastructure                    | Maritime Infrastructure                     | Mobilisation of MODU to well site – power generation | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 1                 | 26                    | Low                        | High                | MODERATE                         | MINOR      |
| Technical Infrastructure                    | Other transport infrastructure              | Install signage and directional markings             | +          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 4                | 2             | 1                 | 29                    | Low                        | Medium              | POSITIVE                         | POSITIVE   |
| Technical Infrastructure                    | Other transport infrastructure              | Mobilise / install shore base equipment              | -          | 2              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 1                 | 24                    | Low                        | Medium              | MINOR                            | MINOR      |
| Technical Infrastructure                    | Other transport infrastructure              | Onshore loading/unloading or staging                 | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 1                 | 26                    | Low                        | Medium              | MINOR                            | MINOR      |
| Technical Infrastructure                    | Technical Infrastructure (Energy, Telecoms) | Onshore base equipment and utilities installation    | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | Low                 | NEGLIGIBLE                       | NEGLIGIBLE |
| Technical Infrastructure                    | Technical Infrastructure (Environmental)    | Onshore base equipment and utilities installation    | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       | NEGLIGIBLE |
| Atmospheric Environment                     | Air quality                                 | Mobilisation of MODU to well site – power generation | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 1                 | 23                    | Low                        | Medium              | MINOR                            | MINOR      |
| Atmospheric Environment                     | Air quality                                 | Onshore base equipment and utilities installation    | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       | NEGLIGIBLE |
| Atmospheric Environment                     | Air quality                                 | Onshore loading/unloading or staging                 | -          | 2              | 1           | 4           | 1                | 1                  | 2            | 4           | 2                | 2             | 1                 | 25                    | Low                        | Medium              | MINOR                            | MINOR      |
|                                             | Air quality                                 | Hangar installation                                  | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       | NEGLIGIBLE |
| Acoustic Environment, Vibrations, Radiation | Airborne noise                              | Mobilisation of MODU to well site – power generation | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 1                 | 23                    | Low                        | Medium              | MINOR                            | MINOR      |
| Acoustic Environment, Vibrations, Radiation | Airborne noise                              | Support activities (movement of support vessels)     | -          | 2              | 4           | 4           | 1                | 1                  | 1            | 4           | 2                | 1             | 1                 | 29                    | Low                        | Medium              | MINOR                            | MINOR      |
| Acoustic Environment, Vibrations, Radiation | Airborne noise                              | Onshore base equipment and utilities installation    | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       | NEGLIGIBLE |



| Environmental & Social Parameters                                 | Valued Receptors              | Project Activities / Elements                         | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-------------------------------------------------------------------|-------------------------------|-------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
| Acoustic Environment, Vibrations, Radiation                       | Airborne noise                | Onshore loading/unloading or staging                  | -          | 2              | 1           | 4           | 1                | 1                  | 2            | 4           | 2                | 2             | 1                 | 25                    | Low                        | Medium              | MINOR                            |
| Acoustic Environment, Vibrations, Radiation                       | Underwater noise              | Mobilisation of MODU and support vessels to well site | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 25                    | Low                        | High                | MODERATE                         |
| Acoustic Environment, Vibrations, Radiation                       | Vibrations                    | Mobilisation of MODU to well site – power generation  | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 22                    | Low                        | Low                 | NEGLIGIBLE                       |
| Acoustic Environment, Vibrations, Radiation                       | Vibrations                    | Onshore base equipment and utilities installation     | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 22                    | Low                        | Low                 | NEGLIGIBLE                       |
| Acoustic Environment, Vibrations, Radiation                       | Vibrations                    | Onshore loading/unloading or staging                  | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | Low                 | NEGLIGIBLE                       |
| Radiation emissions                                               | Electromagnetic radiation     | Mobilisation of MODU to well site – power generation  | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | Low                 | NEGLIGIBLE                       |
| Water resources                                                   | Seawater                      | Mobilisation of MODU to well site – power generation  | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 21                    | Low                        | High                | MODERATE                         |
| Water resources                                                   | Surface water and groundwater | Onshore base equipment and utilities installation     | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | Low                 | NEGLIGIBLE                       |
| Water resources                                                   | Surface water and groundwater | Onshore loading/unloading or staging                  | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 1                 | 21                    | Low                        | Low                 | NEGLIGIBLE                       |
| <b>Exploration Drilling Operations Phase - Routine Activities</b> |                               |                                                       |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |
| Climate Resilience                                                | Microclimate                  | MODU and support/supply vessel power generation       | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 1           | 4                | 2             | 1                 | 26                    | Low                        | Medium              | MINOR                            |

| Environmental & Social Parameters             | Valued Receptors | Project Activities / Elements                                                                                                                                                            | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
| Climate Resilience                            | Microclimate     | Operation of onshore facilities, equipment and vehicles                                                                                                                                  | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 1           | 4                | 2             | 1                 | 23                    | Low                        | Medium              | MINOR                            |
| Climate Resilience                            | Microclimate     | Helicopter transfers between heliport and MODU                                                                                                                                           | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 1           | 1                | 2             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       |
| Morphological and Topological Characteristics | Morphology       | MODU drilling, wellhead and casing installation                                                                                                                                          | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       |
| Morphological and Topological Characteristics | Morphology       | Discharge of water-based fluids and cuttings to seabed (riserless drilling)                                                                                                              | -          | 2              | 2           | 4           | 1                | 1                  | 1            | 4           | 4                | 2             | 1                 | 28                    | Low                        | Medium              | MINOR                            |
| Morphological and Topological Characteristics | Morphology       | Cement discharges at sea bed                                                                                                                                                             | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       |
| Morphological and Topological Characteristics | Morphology       | Drilling contingency activities (re-spudding, sidetracking, temporary well suspension, emergency disconnect, lost-circulation response, contingent cementing, mechanical pipe severance) | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 23                    | Low                        | Medium              | MINOR                            |
| Morphological and Topological Characteristics | Landscape        | MODU safety exclusion zone and support/supply vessel transfers                                                                                                                           | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 21                    | Low                        | Low                 | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Geology          | MODU drilling, wellhead and casing installation                                                                                                                                          | -          | 2              | 1           | 4           | 4                | 4                  | 1            | 4           | 1                | 2             | 1                 | 29                    | Low                        | Medium              | MINOR                            |
| Geological, Tectonic and Soil Characteristics | Geology          | Discharge of water-based fluids and cuttings to seabed (riserless drilling)                                                                                                              | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Geology          | Discharge of water-based fluids and cuttings near sea surface (drilling with riser)                                                                                                      | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Geology          | Cement discharges at seabed                                                                                                                                                              | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       |

| Environmental & Social Parameters             | Valued Receptors         | Project Activities / Elements                                                                                                                                                            | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
| Geological, Tectonic and Soil Characteristics | Slope stability          | MODU drilling, wellhead and casing installation                                                                                                                                          | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 23                    | Low                        | Medium              | MINOR                            |
| Geological, Tectonic and Soil Characteristics | Slope stability          | Discharge of water-based fluids and cuttings to seabed (riserless drilling)                                                                                                              | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | Medium              | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Slope stability          | Drilling contingency activities (re-spudding, sidetracking, temporary well suspension, emergency disconnect, lost-circulation response, contingent cementing, mechanical pipe severance) | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 23                    | Low                        | Medium              | MINOR                            |
| Geological, Tectonic and Soil Characteristics | Tectonics and seismicity | MODU drilling, wellhead and casing installation                                                                                                                                          | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | Medium              | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Soil                     | Logistics base chemicals management                                                                                                                                                      | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 2                | 1             | 1                 | 21                    | Low                        | Low                 | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Soil                     | Logistics base waste management (including HW)                                                                                                                                           | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 2                | 1             | 1                 | 21                    | Low                        | Low                 | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Soil                     | Logistics base drainage (discharge of rainwater run-off)                                                                                                                                 | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | Low                 | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Seabed / Sediment        | Drillship dynamic positioning (DP)                                                                                                                                                       | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 4                | 2             | 4                 | 27                    | Low                        | Medium              | MINOR                            |
| Geological, Tectonic and Soil Characteristics | Seabed / Sediment        | MODU drilling, wellhead and casing installation                                                                                                                                          | -          | 2              | 2           | 4           | 3                | 3                  | 2            | 4           | 4                | 4             | 4                 | 38                    | Low                        | Medium              | MINOR                            |
| Geological, Tectonic and Soil Characteristics | Seabed / Sediment        | Discharge of water-based fluids and cuttings to seabed (riserless drilling)                                                                                                              | -          | 4              | 2           | 4           | 2                | 2                  | 2            | 4           | 4                | 3             | 4                 | 41                    | Medium                     | Medium              | MODERATE                         |
| Geological, Tectonic and Soil Characteristics | Seabed / Sediment        | Discharge of water-based fluids and cuttings near sea surface (drilling with riser)                                                                                                      | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 4                | 2             | 4                 | 27                    | Low                        | Medium              | MINOR                            |

| Environmental & Social Parameters             | Valued Receptors         | Project Activities / Elements                                                                                                                                                            | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |       |
|-----------------------------------------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|-------|
| Geological, Tectonic and Soil Characteristics | Seabed / Sediment        | Cement discharges at seabed                                                                                                                                                              | -          | 4              | 2           | 4           | 3                | 3                  | 2            | 4           | 1                | 4             | 4                 | 41                    | Medium                     | Medium              | MODERATE                         | MINOR |
| Geological, Tectonic and Soil Characteristics | Seabed / Sediment        | Cement discharges near sea surface from tank wash out                                                                                                                                    | -          | 2              | 1           | 4           | 2                | 2                  | 2            | 4           | 1                | 2             | 4                 | 29                    | Low                        | Medium              | MINOR                            | MINOR |
| Geological, Tectonic and Soil Characteristics | Seabed / Sediment        | Discharge of food waste from MODU and support/supply vessels                                                                                                                             | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 4                 | 28                    | Low                        | Medium              | MINOR                            | MINOR |
| Geological, Tectonic and Soil Characteristics | Seabed / Sediment        | ROV Operation                                                                                                                                                                            | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 4                 | 22                    | Low                        | Medium              | MINOR                            | MINOR |
| Geological, Tectonic and Soil Characteristics | Seabed / Sediment        | Drilling contingency activities (re-spudding, sidetracking, temporary well suspension, emergency disconnect, lost-circulation response, contingent cementing, mechanical pipe severance) | -          | 4              | 2           | 4           | 2                | 2                  | 2            | 4           | 1                | 3             | 4                 | 38                    | Low                        | Medium              | MINOR                            | MINOR |
| Biotic Environment                            | Benthic fauna / habitats | MODU safety exclusion zone and support/supply vessel transfers                                                                                                                           | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 4                 | 25                    | Low                        | Medium              | MINOR                            | MINOR |
|                                               | Benthic fauna / habitats | Drillship dynamic positioning (DP)                                                                                                                                                       | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 4                | 1             | 1                 | 25                    | Low                        | Medium              | MINOR                            | MINOR |
|                                               | Benthic fauna / habitats | MODU drilling, wellhead and casing installation                                                                                                                                          | -          | 8              | 2           | 4           | 1                | 4                  | 2            | 4           | 4                | 4             | 1                 | 52                    | Medium                     | Medium              | MODERATE                         | MINOR |
|                                               | Benthic fauna / habitats | Discharge of water based fluids and cuttings to seabed (riserless drilling)                                                                                                              | -          | 8              | 2           | 4           | 1                | 4                  | 2            | 4           | 4                | 4             | 4                 | 55                    | Medium                     | Medium              | MODERATE                         | MINOR |
|                                               | Benthic fauna / habitats | Discharge of water based fluids and cuttings near sea surface (drilling with riser)                                                                                                      | -          | 1              | 4           | 4           | 1                | 2                  | 2            | 1           | 1                | 2             | 4                 | 28                    | Low                        | Medium              | MINOR                            | MINOR |
|                                               | Benthic fauna / habitats | Cement discharges at sea bed                                                                                                                                                             | -          | 8              | 1           | 4           | 1                | 2                  | 2            | 4           | 4                | 4             | 4                 | 51                    | Medium                     | Medium              | MODERATE                         | MINOR |
|                                               | Benthic fauna / habitats | Cement discharges near sea surface from tank wash out                                                                                                                                    | -          | 2              | 1           | 4           | 1                | 1                  | 2            | 1           | 1                | 2             | 4                 | 24                    | Low                        | Medium              | MINOR                            | MINOR |

| Environmental & Social Parameters | Valued Receptors         | Project Activities / Elements                                                                                            | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
|                                   | Benthic fauna / habitats | Pipe dope use during drilling                                                                                            | -          | 4              | 2           | 4           | 1                | 1                  | 2            | 4           | 4                | 2             | 4                 | 38                    | Low                        | Medium              | MINOR                            |
|                                   | Benthic fauna / habitats | Testing of MODU blowout preventer (Discharges)                                                                           | -          | 4              | 1           | 4           | 1                | 1                  | 2            | 4           | 2                | 2             | 4                 | 34                    | Low                        | Medium              | MINOR                            |
|                                   | Benthic fauna / habitats | Discharge of sanitary waste from MODU and support/supply vessels                                                         | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 4                 | 25                    | Low                        | Medium              | MINOR                            |
|                                   | Benthic fauna / habitats | Discharge of food waste from MODU and support/supply vessels                                                             | -          | 2              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 27                    | Low                        | Medium              | MINOR                            |
|                                   | Benthic fauna / habitats | Desalination unit discharges from MODU                                                                                   | -          | 2              | 1           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 4                 | 26                    | Low                        | Medium              | MINOR                            |
|                                   | Benthic fauna / habitats | Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 4                 | 25                    | Low                        | Medium              | MINOR                            |
|                                   | Benthic fauna / habitats | Uplift and discharge of cooling water from MODU                                                                          | -          | 2              | 1           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 4                 | 26                    | Low                        | Medium              | MINOR                            |
|                                   | Benthic fauna / habitats | Discharge of ballast from MODU and support/supply vessels                                                                | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 4                 | 25                    | Low                        | Medium              | MINOR                            |
|                                   | Benthic fauna / habitats | Support activities (movement of support vessels)                                                                         | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 4                 | 25                    | Low                        | Medium              | MINOR                            |
|                                   | Benthic fauna / habitats | Lighting from MODU                                                                                                       | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | Medium              | NEGLIGIBLE                       |
|                                   | Benthic fauna / habitats | Chemical use and storage                                                                                                 | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 4                 | 19                    | Negligible                 | Medium              | NEGLIGIBLE                       |
|                                   | Benthic fauna / habitats | Radioactive source use and storage (well logging)                                                                        | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 4                 | 19                    | Negligible                 | Medium              | NEGLIGIBLE                       |
|                                   | Benthic fauna / habitats | ROV Operation                                                                                                            | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Marine Mammals           | MODU safety exclusion zone and support/supply vessel transfers (direct spatial disturbance)                              | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
|                                   | Marine Mammals           | MODU safety exclusion zone and support/supply vessel transfers (direct                                                   | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |

| Environmental & Social Parameters | Valued Receptors | Project Activities / Elements                                                                          | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|------------------|--------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
|                                   |                  | underwater noise disturbance)                                                                          |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |
|                                   | Marine Mammals   | MODU safety exclusion zone and support/supply vessel transfers (indirect impacts)                      | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Marine Mammals   | Drillship dynamic positioning (DP) (direct impacts)                                                    | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 4                | 1             | 4                 | 28                    | Low                        | High                | MODERATE                         |
|                                   | Marine Mammals   | Drillship dynamic positioning (DP) (indirect impacts)                                                  | -          | 1              | 2           | 3           | 1                | 1                  | 2            | 1           | 4                | 1             | 1                 | 21                    | Low                        | High                | MODERATE                         |
|                                   | Marine Mammals   | MODU drilling, wellhead and casing installation (direct underwater noise disturbance)                  | -          | 2              | 4           | 4           | 2                | 2                  | 2            | 4           | 4                | 2             | 4                 | 38                    | Low                        | High                | MODERATE                         |
|                                   | Marine Mammals   | MODU drilling, wellhead and casing installation (indirect impacts)                                     | -          | 1              | 2           | 3           | 2                | 1                  | 2            | 1           | 4                | 1             | 1                 | 22                    | Low                        | High                | MODERATE                         |
|                                   | Marine Mammals   | Discharge of water based fluids and cuttings to seabed (riserless drilling) (direct impacts)           | -          | 1              | 2           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 4                 | 26                    | Low                        | High                | MODERATE                         |
|                                   | Marine Mammals   | Discharge of water based fluids and cuttings to seabed (riserless drilling) (indirect impacts)         | -          | 1              | 2           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 4                 | 21                    | Low                        | High                | MODERATE                         |
|                                   | Marine Mammals   | Discharge of water based fluids and cuttings near sea surface (drilling with riser) (direct impacts)   | -          | 4              | 4           | 2           | 2                | 2                  | 2            | 1           | 1                | 1             | 4                 | 35                    | Low                        | High                | MODERATE                         |
|                                   | Marine Mammals   | Discharge of water based fluids and cuttings near sea surface (drilling with riser) (indirect impacts) | -          | 1              | 8           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 4                 | 33                    | Low                        | High                | MODERATE                         |
|                                   | Marine Mammals   | Cement discharges at seabed (direct impacts)                                                           | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 4                 | 24                    | Low                        | High                | MODERATE                         |
|                                   | Marine Mammals   | Cement discharges at seabed (indirect impacts)                                                         | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 4                 | 19                    | Negligible                 | High                | MINOR                            |

| Environmental & Social Parameters | Valued Receptors | Project Activities / Elements                                                       | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|------------------|-------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|----------------------------------|
|                                   | Marine Mammals   | Cement discharges near sea surface from tank wash out (direct impacts)              | -          | 1              | 2           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 4                 | 26                    | Low        | High                       | MODERATE            | MINOR                            |
|                                   | Marine Mammals   | Cement discharges near sea surface from tank wash out (indirect impacts)            | -          | 1              | 2           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 4                 | 21                    | Low        | High                       | MODERATE            | MINOR                            |
|                                   | Marine Mammals   | Pipe dope use during drilling (direct impacts)                                      | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 1                 | 21                    | Low        | High                       | MODERATE            | MINOR                            |
|                                   | Marine Mammals   | Pipe dope use during drilling (indirect impacts)                                    | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 1           | 1                | 1             | 1                 | 17                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Marine Mammals   | Testing of MODU blowout preventer (discharges) (indirect impacts)                   | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 1           | 1                | 1             | 1                 | 17                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Marine Mammals   | Testing of MODU blowout preventer (discharges) (direct impacts)                     | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 1                 | 21                    | Low        | High                       | MODERATE            | MINOR                            |
|                                   | Marine Mammals   | Discharge of sanitary waste from MODU and support/supply vessels (direct impacts)   | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Marine Mammals   | Discharge of sanitary waste from MODU and support/supply vessels (indirect impacts) | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Marine Mammals   | Discharge of food waste from MODU and support/supply vessels (direct impacts)       | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Marine Mammals   | Discharge of food waste from MODU and support/supply vessels (indirect impacts)     | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Marine Mammals   | Desalination unit discharges from MODU (direct impacts)                             | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Marine Mammals   | Desalination unit discharges from MODU (indirect impacts)                           | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Marine Mammals   | Discharge of drainage water (deck drainage, fire                                    | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |



| Environmental & Social Parameters | Valued Receptors | Project Activities / Elements                                                                                                               | Nature (S)                                                            | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |          |
|-----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|----------|
|                                   |                  | water, bilge water and slop water) from MODU and support/supply vessels (direct impacts)                                                    |                                                                       |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |          |
|                                   | Marine Mammals   | Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels (indirect impacts) | -                                                                     | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            | MINOR    |
|                                   | Marine Mammals   | Uplift and discharge of cooling water from MODU (direct impacts)                                                                            | -                                                                     | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR    |
|                                   | Marine Mammals   | Uplift and discharge of cooling water from MODU (indirect impacts)                                                                          | -                                                                     | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            | MINOR    |
|                                   | Marine Mammals   | Discharge of ballast from MODU and support/supply vessels (direct impacts)                                                                  | -                                                                     | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR    |
|                                   | Marine Mammals   | Discharge of ballast from MODU and support/supply vessels (indirect impacts)                                                                | -                                                                     | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            | MINOR    |
|                                   | Marine Mammals   | Vertical seismic profile (VSP) activities (direct underwater noise disturbance)                                                             | -                                                                     | 4              | 8           | 4           | 2                | 2                  | 2            | 4           | 2                | 2             | 4                 | 50                    | Medium                     | High                | SEVERE                           | MODERATE |
|                                   | Marine Mammals   | Vertical seismic profile (VSP) activities (indirect impacts)                                                                                | -                                                                     | 4              | 4           | 4           | 2                | 2                  | 2            | 1           | 2                | 2             | 4                 | 39                    | Low                        | High                | MODERATE                         | MINOR    |
|                                   | Marine Mammals   | Support activities (movement of support vessels)                                                                                            | Please refer to MODU safety exclusion zone and support /supply vessel |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |          |

| Environmental & Social Parameters | Valued Receptors | Project Activities / Elements                                                                        | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |       |
|-----------------------------------|------------------|------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|-------|
|                                   |                  |                                                                                                      | transfers  |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |       |
|                                   | Marine Mammals   | Lighting from MODU (direct impacts)                                                                  | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 4           | 4                | 1             | 1                 | 24                    | Low                        | High                | MODERATE                         | MINOR |
|                                   | Marine Mammals   | Lighting from MODU (indirect impacts)                                                                | -          | 1              | 1           | 2           | 1                | 1                  | 1            | 1           | 4                | 1             | 1                 | 17                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Marine Mammals   | Chemical use and storage (direct impacts)*                                                           | -          | 1              | 1           | 2           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 18                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Marine Mammals   | Chemical use and storage (indirect impacts)*                                                         | -          | 1              | 1           | 2           | 1                | 1                  | 2            | 1           | 1                | 1             | 1                 | 15                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Marine Mammals   | Radioactive source use and storage (direct impacts)*                                                 | -          | 1              | 1           | 2           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 18                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Marine Mammals   | Radioactive source use and storage (indirect impacts)*                                               | -          | 1              | 1           | 2           | 1                | 1                  | 2            | 1           | 1                | 1             | 1                 | 15                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Marine Mammals   | ROV operation (direct impacts)                                                                       | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Marine Mammals   | ROV operation (indirect impacts)                                                                     | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Marine Mammals   | Logistics base drainage (discharge of rainwater runoff) (direct impacts)                             | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Marine Mammals   | Logistics base drainage (discharge of rainwater runoff) (indirect impacts)                           | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Sea Turtles      | MODU safety exclusion zone and support/supply vessel transfers (direct spatial disturbance)          | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Sea Turtles      | MODU safety exclusion zone and support/supply vessel transfers (direct underwater noise disturbance) | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Sea Turtles      | MODU safety exclusion zone and support/supply vessel transfers (indirect impacts)                    | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR |

| Environmental & Social Parameters | Valued Receptors | Project Activities / Elements                                                                          | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|------------------|--------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|----------------------------------|
|                                   | Sea Turtles      | Drillship dynamic positioning (DP) (direct impacts)                                                    | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 4                | 1             | 4                 | 28                    | Low        | High                       | MODERATE            | MINOR                            |
|                                   | Sea Turtles      | Drillship dynamic positioning (DP) (indirect impacts)                                                  | -          | 1              | 2           | 3           | 1                | 1                  | 2            | 1           | 4                | 1             | 1                 | 21                    | Low        | High                       | MODERATE            | MINOR                            |
|                                   | Sea Turtles      | MODU drilling, wellhead and casing installation (direct underwater noise disturbance)                  | -          | 2              | 4           | 4           | 2                | 2                  | 2            | 4           | 4                | 2             | 4                 | 38                    | Low        | High                       | MODERATE            | MINOR                            |
|                                   | Sea Turtles      | MODU drilling, wellhead and casing installation (indirect impacts)                                     | -          | 1              | 2           | 3           | 2                | 1                  | 2            | 1           | 4                | 1             | 1                 | 22                    | Low        | High                       | MODERATE            | MINOR                            |
|                                   | Sea Turtles      | Discharge of water based fluids and cuttings to seabed (riserless drilling) (direct impacts)           | -          | 2              | 2           | 2           | 2                | 2                  | 2            | 4           | 1                | 1             | 4                 | 28                    | Low        | High                       | MODERATE            | MINOR                            |
|                                   | Sea Turtles      | Discharge of water based fluids and cuttings to seabed (riserless drilling) (indirect impacts)         | -          | 1              | 2           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 4                 | 21                    | Low        | High                       | MODERATE            | MINOR                            |
|                                   | Sea Turtles      | Discharge of water based fluids and cuttings near sea surface (drilling with riser) (direct impacts)   | -          | 2              | 8           | 2           | 2                | 2                  | 2            | 1           | 1                | 1             | 4                 | 37                    | Low        | High                       | MODERATE            | MINOR                            |
|                                   | Sea Turtles      | Discharge of water based fluids and cuttings near sea surface (drilling with riser) (indirect impacts) | -          | 1              | 8           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 4                 | 33                    | Low        | High                       | MODERATE            | MINOR                            |
|                                   | Sea Turtles      | Cement discharges at seabed (direct impacts)                                                           | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 4                 | 24                    | Low        | High                       | MODERATE            | MINOR                            |
|                                   | Sea Turtles      | Cement discharges at seabed (indirect impacts)                                                         | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 4                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Sea Turtles      | Cement discharges near sea surface from tank wash out (direct impacts)                                 | -          | 1              | 2           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 4                 | 26                    | Low        | High                       | MODERATE            | MINOR                            |
|                                   | Sea Turtles      | Cement discharges near sea surface from tank wash out (indirect impacts)                               | -          | 1              | 2           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 4                 | 21                    | Low        | High                       | MODERATE            | MINOR                            |

| Environmental & Social Parameters | Valued Receptors | Project Activities / Elements                                                                                                             | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |       |
|-----------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|-------|
|                                   | Sea Turtles      | Pipe dope use during drilling (direct impacts)                                                                                            | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 1                 | 21                    | Low                        | High                | MODERATE                         | MINOR |
|                                   | Sea Turtles      | Pipe dope use during drilling (indirect impacts)                                                                                          | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 1           | 1                | 1             | 1                 | 17                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Sea Turtles      | Testing of MODU blowout preventer (discharges) (indirect impacts)                                                                         | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 1           | 1                | 1             | 1                 | 17                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Sea Turtles      | Testing of MODU blowout preventer (discharges) (direct impacts)                                                                           | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 1                 | 21                    | Low                        | High                | MODERATE                         | MINOR |
|                                   | Sea Turtles      | Discharge of sanitary waste from MODU and support/supply vessels (direct impacts)                                                         | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Sea Turtles      | Discharge of sanitary waste from MODU and support/supply vessels (indirect impacts)                                                       | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Sea Turtles      | Discharge of food waste from MODU and support/supply vessels (direct impacts)                                                             | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Sea Turtles      | Discharge of food waste from MODU and support/supply vessels (indirect impacts)                                                           | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Sea Turtles      | Desalination unit discharges from MODU (direct impacts)                                                                                   | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Sea Turtles      | Desalination unit discharges from MODU (indirect impacts)                                                                                 | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Sea Turtles      | Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels (direct impacts) | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Sea Turtles      | Discharge of drainage water (deck drainage, fire water, bilge water and                                                                   | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            | MINOR |

| Environmental & Social Parameters | Valued Receptors | Project Activities / Elements                                                   | Nature (S)                                                                      | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|------------------|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
|                                   |                  | slop water) from MODU and support/supply vessels (indirect impacts)             | -                                                                               |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |
|                                   | Sea Turtles      | Uplift and discharge of cooling water from MODU (direct impacts)                | -                                                                               | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | Uplift and discharge of cooling water from MODU (indirect impacts)              | -                                                                               | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | Discharge of ballast from MODU and support/supply vessels (direct impacts)      | -                                                                               | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | Discharge of ballast from MODU and support/supply vessels (indirect impacts)    | -                                                                               | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | Vertical seismic profile (VSP) activities (direct underwater noise disturbance) | -                                                                               | 4              | 4           | 4           | 2                | 2                  | 2            | 4           | 2                | 2             | 4                 | 42                    | Medium                     | High                | SEVERE                           |
|                                   | Sea Turtles      | Vertical seismic profile (VSP) activities (indirect impacts)                    | -                                                                               | 4              | 4           | 4           | 2                | 2                  | 2            | 1           | 2                | 2             | 4                 | 39                    | Low                        | High                | MODERATE                         |
|                                   | Sea Turtles      | Support activities (movement of support vessels)                                | Please refer to MODU safety exclusion zone and support /supply vessel transfers |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |
|                                   | Sea Turtles      | Lighting from MODU (direct impacts)                                             | -                                                                               | 1              | 2           | 4           | 1                | 1                  | 1            | 4           | 4                | 1             | 1                 | 24                    | Low                        | High                | MODERATE                         |
|                                   | Sea Turtles      | Lighting from MODU (indirect impacts)                                           | -                                                                               | 1              | 1           | 2           | 1                | 1                  | 1            | 1           | 4                | 1             | 1                 | 17                    | Negligible                 | High                | MINOR                            |

| Environmental & Social Parameters | Valued Receptors | Project Activities / Elements                                                                 | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|------------------|-----------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
|                                   | Sea Turtles      | Chemical use and storage (direct impacts)*                                                    | -          | 1              | 1           | 2           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 18                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | Chemical use and storage (indirect impacts)*                                                  | -          | 1              | 1           | 2           | 1                | 1                  | 2            | 1           | 1                | 1             | 1                 | 15                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | Radioactive source use and storage (direct impacts)*                                          | -          | 1              | 1           | 2           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 18                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | Radioactive source use and storage (indirect impacts)*                                        | -          | 1              | 1           | 2           | 1                | 1                  | 2            | 1           | 1                | 1             | 1                 | 15                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | ROV operation (direct impacts)                                                                | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | ROV operation (indirect impacts)                                                              | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | Logistics base drainage (discharge of rainwater runoff) (direct impacts)                      | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | Logistics base drainage (discharge of rainwater runoff) (indirect impacts)                    | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | MODU safety exclusion zone and support/supply vessel transfers (indirect spatial disturbance) | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | MODU safety exclusion zone and support/supply vessel transfers (direct UWN)                   | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | MODU safety exclusion zone and support/supply vessel transfers (Indirect UWN)                 | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | Drillship dynamic positioning (DP) - UWN (direct UWN)                                         | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 4                | 1             | 1                 | 23                    | Low                        | High                | MODERATE                         |
|                                   | Fish Fauna       | MODU drilling, wellhead and casing installation (direct UWN)                                  | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 2                | 1             | 1                 | 21                    | Low                        | High                | MODERATE                         |
|                                   | Fish Fauna       | MODU drilling, wellhead and casing installation (indirect UWN)                                | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 17                    | Negligible                 | High                | MINOR                            |

| Environmental & Social Parameters | Valued Receptors | Project Activities / Elements                                                                                                     | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |       |
|-----------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|-------|
|                                   | Fish Fauna       | Discharge of water-based fluids and cuttings to seabed (riserless drilling) (direct)                                              | -          | 2              | 2           | 3           | 1                | 4                  | 2            | 4           | 2                | 1             | 4                 | 31                    | Low                        | High                | MODERATE                         | MINOR |
|                                   | Fish Fauna       | Discharge of water-based fluids and cuttings to seabed (riserless drilling) (indirect)                                            | -          | 2              | 2           | 3           | 2                | 4                  | 2            | 1           | 2                | 3             | 4                 | 31                    | Low                        | High                | MODERATE                         | MINOR |
|                                   | Fish Fauna       | Discharge of water-based fluids and cuttings near sea surface (drilling with riser) (direct)                                      | -          | 2              | 2           | 4           | 1                | 4                  | 2            | 4           | 2                | 1             | 4                 | 32                    | Low                        | High                | MODERATE                         | MINOR |
|                                   | Fish Fauna       | Cement discharges at seabed (direct)                                                                                              | -          | 2              | 1           | 4           | 2                | 3                  | 2            | 4           | 2                | 2             | 4                 | 31                    | Low                        | High                | MODERATE                         | MINOR |
|                                   | Fish Fauna       | Cement discharges near sea surface from tank wash out (direct)                                                                    | -          | 2              | 2           | 4           | 2                | 3                  | 2            | 4           | 2                | 1             | 4                 | 32                    | Low                        | High                | MODERATE                         | MINOR |
|                                   | Fish Fauna       | Pipe dope use during drilling (direct)                                                                                            | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Fish Fauna       | Testing of MODU blowout preventer (discharges) (direct)                                                                           | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Fish Fauna       | Discharge of sanitary waste from MODU and support/supply vessels (direct)                                                         | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Fish Fauna       | Discharge of food waste from MODU and support/supply vessels (direct)                                                             | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Fish Fauna       | Desalination unit discharges from MODU (direct)                                                                                   | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Fish Fauna       | Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels (direct) | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            | MINOR |



| Environmental & Social Parameters | Valued Receptors | Project Activities / Elements                                                                  | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|------------------|------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
|                                   | Fish Fauna       | Uplift and discharge of cooling water from MODU (direct)                                       | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | Discharge of ballast from MODU and support/supply vessels (direct)                             | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | Vertical seismic profile (VSP) activities (direct UWN)                                         | -          | 4              | 4           | 4           | 1                | 1                  | 2            | 4           | 2                | 3             | 1                 | 38                    | Low                        | High                | MODERATE                         |
|                                   | Fish Fauna       | Vertical seismic profile (VSP) activities (indirect UWN)                                       | -          | 4              | 4           | 4           | 1                | 1                  | 2            | 1           | 2                | 3             | 1                 | 35                    | Low                        | High                | MODERATE                         |
|                                   | Fish Fauna       | Support activities (movement of support vessels) (direct UWN)                                  | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | Support activities (movement of support vessels) (indirect UWN)                                | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | Support activities (movement of support vessels) (direct spatial disturbance)                  | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | Lighting from MODU                                                                             | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 22                    | Low                        | High                | MODERATE                         |
|                                   | Fish Fauna       | Chemical use and storage                                                                       | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | Radioactive source use and storage (well logging)                                              | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | ROV Operation                                                                                  | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | Logistics base drainage (discharge of rainwater run-off)                                       | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
|                                   | Avifauna         | MODU safety exclusion zone and support/supply vessel transfers – power generation (collisions) | -          | 2              | 8           | 4           | 2                | 1                  | 2            | 4           | 2                | 3             | 1                 | 41                    | Medium                     | Medium              | MODERATE                         |
|                                   | Avifauna         | MODU safety exclusion zone and support/supply vessel transfers – power generation (increased   | -          | 2              | 8           | 4           | 2                | 1                  | 2            | 4           | 2                | 3             | 1                 | 41                    | Medium                     | Medium              | MODERATE                         |

| Environmental &Social Parameters | Valued Receptors | Project Activities / Elements                                                                               | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |          |
|----------------------------------|------------------|-------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|----------|
|                                  |                  | energy cost/ exhaustion/ starvation)                                                                        |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |          |
|                                  | Avifauna         | MODU safety exclusion zone and support/supply vessel transfers – power generation (resting/ roosting sites) | +          | 4              | 8           | 4           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 44                    | Medium                     | Medium              | POSITIVE                         | POSITIVE |
|                                  | Avifauna         | Lighting from MODU (collisions)                                                                             | -          | 4              | 8           | 4           | 2                | 1                  | 2            | 4           | 4                | 3             | 1                 | 49                    | Medium                     | Medium              | MODERATE                         | MINOR    |
|                                  | Avifauna         | Lighting from MODU (increased energy cost/ exhaustion/ starvation)                                          | -          | 4              | 8           | 4           | 2                | 1                  | 2            | 4           | 4                | 2             | 1                 | 48                    | Medium                     | Medium              | MODERATE                         | MINOR    |
|                                  | Avifauna         | Helicopter transfers between heliport and MODU (collisions)                                                 | -          | 2              | 8           | 4           | 1                | 1                  | 2            | 4           | 2                | 1             | 1                 | 38                    | Low                        | Medium              | MINOR                            | MINOR    |
|                                  | Avifauna         | Support activities (movement of support vessels) (collisions)                                               | -          | 2              | 8           | 4           | 2                | 1                  | 2            | 4           | 1                | 3             | 1                 | 40                    | Low                        | Medium              | MINOR                            | MINOR    |
|                                  | Avifauna         | Support activities (movement of support vessels) (increased energy cost/ exhaustion/ starvation)            | -          | 2              | 8           | 4           | 2                | 1                  | 2            | 4           | 1                | 2             | 1                 | 39                    | Low                        | Medium              | MINOR                            | MINOR    |
|                                  | Avifauna         | Support activities (movement of support vessels) (resting/ roosting sites)                                  | +          | 2              | 8           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 37                    | Low                        | Medium              | POSITIVE                         | POSITIVE |
|                                  | Planton          | Discharge of water based fluids and cuttings to seabed (riserless drilling) (indirect impacts)              | -          | 1              | 2           | 3           | 2                | 4                  | 2            | 1           | 2                | 1             | 4                 | 26                    | Low                        | High                | MODERATE                         | MINOR    |
|                                  | Planton          | Discharge of water based fluids and cuttings near sea surface (drilling with riser) (direct impacts)        | -          | 2              | 8           | 2           | 2                | 2                  | 2            | 1           | 1                | 1             | 4                 | 37                    | Low                        | High                | MODERATE                         | MINOR    |
|                                  | Planton          | Discharge of water based fluids and cuttings near sea surface (drilling with riser) (indirect impacts)      | -          | 1              | 8           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 4                 | 33                    | Low                        | High                | MODERATE                         | MINOR    |
|                                  | Planton          | Cement discharges at sea bed (direct impacts)                                                               | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 4                 | 24                    | Low                        | High                | MODERATE                         | MINOR    |

| Environmental & Social Parameters | Valued Receptors | Project Activities / Elements                                                                                                             | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |       |
|-----------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|-------|
|                                   | Planton          | Cement discharges at sea bed (indirect impacts)                                                                                           | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 4                 | 19                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Planton          | Cement discharges near sea surface from tank wash out (direct impacts)                                                                    | -          | 1              | 2           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 4                 | 26                    | Low                        | High                | MODERATE                         | MINOR |
|                                   | Planton          | Cement discharges near sea surface from tank wash out (indirect impacts)                                                                  | -          | 1              | 2           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 4                 | 21                    | Low                        | High                | MODERATE                         | MINOR |
|                                   | Planton          | Discharge of sanitary waste from MODU and support/supply vessels (direct impacts)                                                         | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Planton          | Discharge of sanitary waste from MODU and support/supply vessels (indirect impacts)                                                       | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Planton          | Discharge of food waste from MODU and support/supply vessels (direct impacts)                                                             | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Planton          | Discharge of food waste from MODU and support/supply vessels (indirect impacts)                                                           | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Planton          | Desalination unit discharges from MODU (direct impacts)                                                                                   | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Planton          | Desalination unit discharges from MODU (indirect impacts)                                                                                 | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Planton          | Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels (direct impacts) | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Planton          | Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU                                             | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            | MINOR |

| Environmental & Social Parameters | Valued Receptors | Project Activities / Elements                                                                                            | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
|                                   |                  | and support/supply vessels (indirect impacts)                                                                            | -          |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |
|                                   | Planton          | Uplift and discharge of cooling water from MODU (direct impacts)                                                         | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Planton          | Uplift and discharge of cooling water from MODU (indirect impacts)                                                       | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
|                                   | Planton          | Discharge of ballast from MODU and support/supply vessels (direct impacts)                                               | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Planton          | Discharge of ballast from MODU and support/supply vessels (indirect impacts)                                             | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
|                                   | Zooplankton only | Vertical seismic profile (VSP) activities (direct underwater noise disturbance)                                          | -          | 4              | 4           | 4           | 2                | 2                  | 2            | 4           | 1                | 2             | 1                 | 38                    | Low                        | High                | MODERATE                         |
|                                   | Planton          | Lighting from MODU                                                                                                       | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
|                                   | Protected Areas  | Mobilisation of MODU to well site – power generation                                                                     | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Protected Areas  | MODU safety exclusion zone and support/supply vessel transfers                                                           | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Protected Areas  | Discharge of water based fluids and cuttings near sea surface (drilling with riser)                                      | -          | 1              | 2           | 2           | 2                | 1                  | 2            | 4           | 1                | 2             | 4                 | 25                    | Low                        | High                | MODERATE                         |
|                                   | Protected Areas  | Cement discharges near sea surface from tank wash out                                                                    | -          | 1              | 2           | 2           | 2                | 1                  | 2            | 4           | 1                | 2             | 4                 | 25                    | Low                        | High                | MODERATE                         |
|                                   | Protected Areas  | Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels | -          | 1              | 1           | 3           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 19                    | Negligible                 | High                | MINOR                            |

| Environmental & Social Parameters | Valued Receptors              | Project Activities / Elements                                                       | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|-------------------------------|-------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
|                                   | Protected Areas               | Discharge of ballast from MODU and support/supply vessels                           | -          | 1              | 2           | 2           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
|                                   | Protected Areas               | Vertical seismic profile (VSP) activities                                           | -          | 2              | 4           | 4           | 2                | 2                  | 2            | 4           | 1                | 2             | 1                 | 32                    | Low                        | High                | MODERATE                         |
|                                   | Protected Areas               | Support activities (movement of support vessels)                                    | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Protected Areas               | Mobilisation of MODU to well site – power generation                                | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Other important natural areas | As per marine mammals, sea turtles and fish fauna                                   |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |
| Anthropogenic Environment         | Spatial Planning and Land Use | Operation of facilities, equipment and vehicles                                     | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 4                | 1             | 1                 | 23                    | Low                        | Medium              | MINOR                            |
| Anthropogenic Environment         | Spatial Planning and Land Use | Logistics base operation - disruption to port activities                            | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 4                | 1             | 1                 | 23                    | Low                        | Medium              | MINOR                            |
| Anthropogenic Environment         | Maritime uses                 | MODU safety exclusion zone and support/supply vessel transfers                      | -          | 2              | 2           | 4           | 1                | 1                  | 1            | 4           | 4                | 1             | 1                 | 27                    | Low                        | High                | MODERATE                         |
| Anthropogenic Environment         | Maritime uses                 | Drillship dynamic positioning (DP)                                                  | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 17                    | Negligible                 | High                | MINOR                            |
| Anthropogenic Environment         | Maritime uses                 | MODU drilling, wellhead and casing installation                                     | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 17                    | Negligible                 | High                | MINOR                            |
| Anthropogenic Environment         | Maritime uses                 | Discharge of water based fluids and cuttings to seabed (riserless drilling)         | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 17                    | Negligible                 | High                | MINOR                            |
| Anthropogenic Environment         | Maritime uses                 | Discharge of water based fluids and cuttings near sea surface (drilling with riser) | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 17                    | Negligible                 | High                | MINOR                            |
| Anthropogenic Environment         | Maritime uses                 | MODU and support/supply vessel power generation                                     | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 17                    | Negligible                 | High                | MINOR                            |
| Anthropogenic Environment         | Maritime uses                 | Vertical seismic profile (VSP) activities                                           | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Anthropogenic Environment         | Maritime uses                 | Support activities (movement of support vessels)                                    | -          | 2              | 2           | 4           | 1                | 1                  | 1            | 4           | 4                | 1             | 1                 | 27                    | Low                        | High                | MODERATE                         |
| Anthropogenic Environment         | Maritime uses                 | Lighting from MODU                                                                  | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 4                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |

| Environmental & Social Parameters | Valued Receptors                                         | Project Activities / Elements                                                                                                                                                                         | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
| Anthropogenic Environment         | Maritime uses                                            | ROV Operation                                                                                                                                                                                         | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Anthropogenic Environment         | Maritime uses                                            | Operation of facilities, equipment and vehicles                                                                                                                                                       | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 2                | 1             | 1                 | 18                    | Negligible                 | High                | MINOR                            |
| Anthropogenic Environment         | Maritime uses                                            | Logistics base operation - disruption to port activities                                                                                                                                              | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 2                | 1             | 1                 | 18                    | Negligible                 | High                | MINOR                            |
| Anthropogenic Environment         | Structure and Functions of the Anthropogenic Environment |                                                                                                                                                                                                       |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |
| Anthropogenic Environment         | Cultural Heritage                                        | MODU safety exclusion zone and support/supply vessel transfers                                                                                                                                        | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 4                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Anthropogenic Environment         | Cultural Heritage                                        | MODU drilling, wellhead and casing installation                                                                                                                                                       | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Anthropogenic Environment         | Cultural Heritage                                        | Discharge of WBM fluids/cuttings to seabed                                                                                                                                                            | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 17                    | Negligible                 | High                | MINOR                            |
| Anthropogenic Environment         | Cultural Heritage                                        | Cement discharges at seabed                                                                                                                                                                           | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Anthropogenic Environment         | Cultural Heritage                                        | ROV operation                                                                                                                                                                                         | +          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 22                    | Low                        | High                | POSITIVE                         |
| Anthropogenic Environment         | Cultural Heritage                                        | Drilling contingency activities (including re-spudding, sidetracking, temporary well suspension, emergency disconnect, lost-circulation response, contingent cementing and mechanical pipe severance) | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Economic activities                                      | MODU safety exclusion zone and support/supply vessel transfers                                                                                                                                        | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Economic activities                                      | MODU drilling, wellhead and casing installation                                                                                                                                                       | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Economic activities                                      | Discharge of WBM fluids/cuttings to seabed                                                                                                                                                            | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |

| Environmental & Social Parameters | Valued Receptors    | Project Activities / Elements                                                                                                                                              | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
| Socio-economic environment        | Economic activities | Discharge of WBM fluids/cuttings near sea surface                                                                                                                          | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Economic activities | Cement discharges at seabed                                                                                                                                                | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Economic activities | Cement discharges near sea surface (tank wash out)                                                                                                                         | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Economic activities | Pipe dope use during drilling                                                                                                                                              | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Economic activities | Testing of MODU blowout preventer                                                                                                                                          | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Economic activities | Discharge of sanitary waste (MODU/vessels)                                                                                                                                 | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Economic activities | Discharge of food waste (MODU/vessels)                                                                                                                                     | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Economic activities | Desalination unit discharges from MODU                                                                                                                                     | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Economic activities | Discharge of drainage water (deck/fire/bilge/slop)                                                                                                                         | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Economic activities | Uplift and discharge of cooling water from MODU                                                                                                                            | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Economic activities | Discharge of ballast (MODU/vessels)                                                                                                                                        | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Economic activities | MODU and support/supply vessel power generation                                                                                                                            | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Economic activities | Vertical seismic profile (VSP) activities                                                                                                                                  | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 17                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Economic activities | Support activities (movement of support vessels)                                                                                                                           | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Economic activities | Drilling contingency activities (including re-spudding, sidetracking, temporary well suspension, emergency disconnect, lost-circulation response, contingent cementing and | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 18                    | Negligible                 | High                | MINOR                            |



| Environmental & Social Parameters | Valued Receptors    | Project Activities / Elements                                                                                                 | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
|                                   |                     | mechanical pipe severance)                                                                                                    |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |
| Socio-economic environment        | Economic activities | Operation of facilities, equipment and vehicles                                                                               | +          | 2              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 22                    | Low                        | High                | POSITIVE                         |
| Socio-economic environment        | Economic activities | Logistics base operation – disruption to port activities                                                                      | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 17                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Economic activities | Helicopter transfers between heliport and MODU                                                                                | +          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 17                    | Negligible                 | High                | POSITIVE                         |
| Socio-economic environment        | Community H&S       | MODU safety exclusion zone and support/supply vessel transfers                                                                | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 1           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S       | Pipe dope use during drilling                                                                                                 | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S       | Testing of MODU blowout preventer                                                                                             | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S       | MODU and support/supply vessel power generation                                                                               | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 18                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S       | Vertical seismic profile (VSP) activities                                                                                     | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S       | Support activities (movement of support vessels)                                                                              | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 18                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S       | Lighting from MODU                                                                                                            | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S       | Chemical use and storage                                                                                                      | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S       | Radioactive source use and storage (well logging)                                                                             | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S       | Drilling contingency activities (re-spud, sidetrack, suspension, EDS, lost-circulation, contingent cementing, pipe severance) | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S       | Operation of facilities, equipment and vehicles                                                                               | +          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 1                 | 20                    | Negligible                 | High                | POSITIVE                         |
| Socio-economic environment        | Community H&S       | Logistics base chemicals management                                                                                           | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 4                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |

| Environmental & Social Parameters | Valued Receptors                            | Project Activities / Elements                                  | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|---------------------------------------------|----------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
| Socio-economic environment        | Community H&S                               | Logistics base waste management (incl. HW)                     | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 4                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S                               | Logistics base operation – disruption to port activities       | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S                               | Onshore storage and transport of radioactive sealed sources    | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S                               | Helicopter transfers between heliport and MODU                 | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 4                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Social Infrastructure             | Social Infrastructure                       |                                                                |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |
| Technical Infrastructure          | Maritime Infrastructure                     | MODU safety exclusion zone and support/supply vessel transfers | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 4                | 2             | 1                 | 26                    | Low                        | Low                 | NEGLIGIBLE                       |
| Technical Infrastructure          | Maritime Infrastructure                     | Support activities (movement of support vessels)               | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 1                 | 23                    | Low                        | High                | MODERATE                         |
| Technical Infrastructure          | Maritime Infrastructure                     | Logistics base operation - disruption to port activities       | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 4                | 2             | 1                 | 29                    | Low                        | High                | MODERATE                         |
| Technical Infrastructure          | Other transport infrastructure              | Operation of facilities, equipment and vehicles                | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 4                | 1             | 1                 | 25                    | Low                        | Medium              | MINOR                            |
| Technical Infrastructure          | Other transport infrastructure              | Logistics base operation - disruption to port activities       | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 4                | 1             | 1                 | 28                    | Low                        | Medium              | MINOR                            |
| Technical Infrastructure          | Other transport infrastructure              | Helicopter transfers between heliport and MODU                 | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 2                | 1             | 1                 | 23                    | Low                        | Medium              | MINOR                            |
| Technical Infrastructure          | Technical Infrastructure (Energy, Telecoms) | Logistics base operation - disruption to port activities       | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 4                | 1             | 1                 | 25                    | Low                        | Low                 | NEGLIGIBLE                       |
| Technical Infrastructure          | Technical Infrastructure (Environmental)    | Logistics base waste management (including HW)                 | -          | 2              | 4           | 4           | 1                | 1                  | 2            | 4           | 2                | 2             | 1                 | 31                    | Low                        | Medium              | MINOR                            |
| Atmospheric Environment           | Air quality                                 | MODU and support/supply vessel power generation                | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 4                | 2             | 1                 | 29                    | Low                        | Medium              | MINOR                            |
| Atmospheric Environment           | Air quality                                 | Operation of onshore facilities, equipment and vehicles        | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       |

| Environmental & Social Parameters | Valued Receptors | Project Activities / Elements                                                                                                                                 | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
| Atmospheric Environment           | Air quality      | Helicopter transfers between heliport and MODU                                                                                                                | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 22                    | Low                        | Medium              | MINOR                            |
| Acoustic Environment, Vibrations  | Airborne noise   | Drillship dynamic positioning (DP)                                                                                                                            | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 22                    | Low                        | Medium              | MINOR                            |
| Acoustic Environment, Vibrations  | Airborne noise   | MODU drilling, wellhead and casing installation                                                                                                               | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 4                | 1             | 1                 | 25                    | Low                        | Medium              | MINOR                            |
| Acoustic Environment, Vibrations  | Airborne noise   | MODU and support/supply vessel power generation                                                                                                               | -          | 2              | 2           | 4           | 1                | 1                  | 1            | 4           | 4                | 1             | 1                 | 27                    | Low                        | Medium              | MINOR                            |
| Acoustic Environment, Vibrations  | Airborne noise   | Operation of onshore facilities, equipment and vehicles                                                                                                       | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       |
| Acoustic Environment, Vibrations  | Airborne noise   | Helicopter transfers between heliport and MODU                                                                                                                | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 25                    | Low                        | Medium              | MINOR                            |
| Acoustic Environment, Vibrations  | Underwater noise | MODU safety exclusion zone and support/supply vessel transfers                                                                                                | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 25                    | Low                        | High                | MODERATE                         |
| Acoustic Environment, Vibrations  | Underwater noise | Drillship dynamic positioning (DP)                                                                                                                            | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 22                    | Low                        | High                | MODERATE                         |
| Acoustic Environment, Vibrations  | Underwater noise | MODU drilling, wellhead and casing installation                                                                                                               | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 4                | 1             | 1                 | 25                    | Low                        | High                | MODERATE                         |
| Acoustic Environment, Vibrations  | Underwater noise | MODU and support/supply vessel power generation                                                                                                               | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 4                | 1             | 1                 | 25                    | Low                        | High                | MODERATE                         |
| Acoustic Environment, Vibrations  | Underwater noise | Vertical seismic profile (VSP) activities                                                                                                                     | -          | 4              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 30                    | Low                        | High                | MODERATE                         |
| Acoustic Environment, Vibrations  | Underwater noise | Drilling contingency activities (re-spudding, sidetracking, temporary well suspension, emergency disconnect, lost-circulation response, contingent cementing, | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 23                    | Low                        | High                | MODERATE                         |

| Environmental & Social Parameters | Valued Receptors          | Project Activities / Elements                                                                                                                                                            | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |            |
|-----------------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|------------|
|                                   |                           | mechanical pipe severance)                                                                                                                                                               |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |            |
| Acoustic Environment, Vibrations  | Underwater noise          | Support activities (movement of support vessels)                                                                                                                                         | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 25                    | Low                        | High                | MODERATE                         | MINOR      |
| Acoustic Environment, Vibrations  | Vibrations                | Drillship dynamic positioning (DP)                                                                                                                                                       | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 22                    | Low                        | Low                 | NEGLIGIBLE                       | NEGLIGIBLE |
| Acoustic Environment, Vibrations  | Vibrations                | MODU drilling, wellhead and casing installation                                                                                                                                          | -          | 4              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 28                    | Low                        | Low                 | NEGLIGIBLE                       | NEGLIGIBLE |
| Acoustic Environment, Vibrations  | Vibrations                | MODU and support/supply vessel power generation                                                                                                                                          | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 22                    | Low                        | Low                 | NEGLIGIBLE                       | NEGLIGIBLE |
| Acoustic Environment, Vibrations  | Vibrations                | Vertical seismic profile (VSP) activities                                                                                                                                                | -          | 4              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 30                    | Low                        | Low                 | NEGLIGIBLE                       | NEGLIGIBLE |
| Acoustic Environment, Vibrations  | Vibrations                | Drilling contingency activities (re-spudding, sidetracking, temporary well suspension, emergency disconnect, lost-circulation response, contingent cementing, mechanical pipe severance) | -          | 4              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 28                    | Low                        | Low                 | NEGLIGIBLE                       | NEGLIGIBLE |
| Acoustic Environment, Vibrations  | Vibrations                | Operation of onshore facilities, equipment and vehicles                                                                                                                                  | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | Low                 | NEGLIGIBLE                       | NEGLIGIBLE |
| Radiation emissions               | Electromagnetic radiation | Radioactive source use and storage (well logging)                                                                                                                                        | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | Low                 | NEGLIGIBLE                       | NEGLIGIBLE |
| Radiation emissions               | Electromagnetic radiation | Onshore storage and transport of radioactive sealed sources                                                                                                                              | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | Low                 | NEGLIGIBLE                       | NEGLIGIBLE |
| Water resources                   | Seawater                  | Drillship dynamic positioning (DP)                                                                                                                                                       | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 1                | 1             | 4                 | 20                    | Negligible                 | High                | MINOR                            | MINOR      |
| Water resources                   | Seawater                  | MODU drilling, wellhead and casing installation                                                                                                                                          | -          | 2              | 1           | 4           | 1                | 1                  | 2            | 1           | 4                | 2             | 4                 | 27                    | Low                        | High                | MODERATE                         | MINOR      |
| Water resources                   | Seawater                  | Discharge of water-based fluids and cuttings to seabed (riserless drilling)                                                                                                              | -          | 4              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 33                    | Low                        | High                | MODERATE                         | MINOR      |

| Environmental & Social Parameters | Valued Receptors              | Project Activities / Elements                                                                                            | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |            |
|-----------------------------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|------------|
| Water resources                   | Seawater                      | Discharge of water-based fluids and cuttings near sea surface (drilling with riser)                                      | -          | 4              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 35                    | Low                        | High                | MODERATE                         | MINOR      |
| Water resources                   | Seawater                      | Cement discharges at seabed                                                                                              | -          | 4              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 33                    | Low                        | High                | MODERATE                         | MINOR      |
| Water resources                   | Seawater                      | Cement discharges near sea surface from tank wash out                                                                    | -          | 4              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 35                    | Low                        | High                | MODERATE                         | MINOR      |
| Water resources                   | Seawater                      | Pipe dope use during drilling                                                                                            | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 24                    | Low                        | High                | MODERATE                         | MINOR      |
| Water resources                   | Seawater                      | Testing of MODU blowout preventer (Discharges)                                                                           | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 24                    | Low                        | High                | MODERATE                         | MINOR      |
| Water resources                   | Seawater                      | Discharge of sanitary waste from MODU and support/supply vessels                                                         | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 29                    | Low                        | High                | MODERATE                         | MINOR      |
| Water resources                   | Seawater                      | Discharge of food waste from MODU and support/supply vessels                                                             | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 29                    | Low                        | High                | MODERATE                         | MINOR      |
| Water resources                   | Seawater                      | Desalination unit discharges from MODU                                                                                   | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 26                    | Low                        | High                | MODERATE                         | MINOR      |
| Water resources                   | Seawater                      | Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 29                    | Low                        | High                | MODERATE                         | MINOR      |
| Water resources                   | Seawater                      | Uplift and discharge of cooling water from MODU                                                                          | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 26                    | Low                        | High                | MODERATE                         | MINOR      |
| Water resources                   | Seawater                      | Discharge of ballast from MODU and support/supply vessels                                                                | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 26                    | Low                        | High                | MODERATE                         | MINOR      |
| Water resources                   | Seawater                      | Support activities (movement of support vessels)                                                                         | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 2                | 1             | 4                 | 26                    | Low                        | High                | MODERATE                         | MINOR      |
| Water resources                   | Seawater                      | Drilling contingency activities                                                                                          | -          | 4              | 2           | 4           | 2                | 2                  | 2            | 4           | 1                | 3             | 4                 | 38                    | Low                        | High                | MODERATE                         | MINOR      |
| Water resources                   | Surface water and groundwater | Logistics base chemicals management                                                                                      | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 2                | 1             | 1                 | 21                    | Low                        | Low                 | NEGLIGIBLE                       | NEGLIGIBLE |

| Environmental & Social Parameters             | Valued Receptors              | Project Activities / Elements                            | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------------------|-------------------------------|----------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
| Water resources                               | Surface water and groundwater | Logistics base waste management (including HW)           | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 2                | 1             | 1                 | 21                    | Low                        | Low                 | NEGLIGIBLE                       |
| Water resources                               | Surface water and groundwater | Logistics base drainage (discharge of rainwater run-off) | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | Low                 | NEGLIGIBLE                       |
| <b>Demobilisation and Abandonment Phase</b>   |                               |                                                          |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |
| Climate Resilience                            | Microclimate                  | MODU circulation and surface handling operations         | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 1           | 1                | 2             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       |
| Morphological and Topological Characteristics | Morphology                    | Cement plug installation and abandonment                 | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       |
| Morphological and Topological Characteristics | Landscape                     | Removal of temporary subsea infrastructure               | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | Low                 | NEGLIGIBLE                       |
| Morphological and Topological Characteristics | Landscape                     | Dismantling and removal from the port area               | +          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 4                | 2             | 1                 | 26                    | Low                        | Low                 | POSITIVE                         |
| Morphological and Topological Characteristics | Landscape                     | Removal of helicopter hangar                             | +          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 4                | 2             | 1                 | 26                    | Low                        | Low                 | POSITIVE                         |
| Geological, Tectonic and Soil Characteristics | Geology                       | Cement plug installation and abandonment                 | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Geology                       | Removal of temporary subsea infrastructure               | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Slope stability               | Cement plug installation and abandonment                 | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Slope stability               | Removal of temporary subsea infrastructure               | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Tectonics and seismicity      | Cement plug installation and abandonment                 | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | Medium              | NEGLIGIBLE                       |

| Environmental & Social Parameters             | Valued Receptors         | Project Activities / Elements                                                          | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------------------|--------------------------|----------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
| Geological, Tectonic and Soil Characteristics | Soil                     | Waste contractor collections (all wastes)                                              | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | Low                 | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Seabed / Sediment        | Cement plug installation and abandonment                                               | -          | 2              | 1           | 4           | 3                | 3                  | 2            | 4           | 4                | 4             | 1                 | 33                    | Low                        | Medium              | MINOR                            |
| Geological, Tectonic and Soil Characteristics | Seabed / Sediment        | MODU circulation and surface handling operations                                       | -          | 4              | 2           | 4           | 2                | 2                  | 2            | 4           | 4                | 3             | 4                 | 41                    | Medium                     | Medium              | MODERATE                         |
| Geological, Tectonic and Soil Characteristics | Seabed / Sediment        | Removal of temporary subsea infrastructure                                             | +          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 4                | 1             | 1                 | 25                    | Low                        | Medium              | MINOR                            |
| Geological, Tectonic and Soil Characteristics | Seabed / Sediment        | ROV post operation seabed survey                                                       | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 4                 | 22                    | Low                        | Medium              | MINOR                            |
| Biotic Environment                            | Benthic fauna / habitats | MODU circulation and surface handling operations                                       | -          | 2              | 2           | 4           | 2                | 2                  | 2            | 4           | 4                | 2             | 4                 | 34                    | Low                        | Medium              | MINOR                            |
|                                               | Benthic fauna / habitats | Removal of temporary subsea infrastructure                                             | +          | 2              | 2           | 4           | 2                | 2                  | 2            | 4           | 1                | 4             | 4                 | 33                    | Low                        | Medium              | POSITIVE                         |
|                                               | Benthic fauna / habitats | Removal of temporary subsea infrastructure                                             | -          | 2              | 2           | 4           | 2                | 2                  | 2            | 4           | 1                | 4             | 4                 | 33                    | Low                        | Medium              | MINOR                            |
|                                               | Benthic fauna / habitats | Cement plug installation and abandonment                                               | -          | 2              | 2           | 4           | 4                | 2                  | 2            | 4           | 1                | 4             | 4                 | 35                    | Low                        | Medium              | MINOR                            |
|                                               | Benthic fauna / habitats | ROV post operation seabed survey                                                       | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | Medium              | NEGLIGIBLE                       |
|                                               | Marine Mammals           | Cement plug installation and abandonment (direct impacts)                              | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
|                                               | Marine Mammals           | Cement plug installation and abandonment (indirect impacts)                            | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 1           | 1                | 1             | 1                 | 17                    | Negligible                 | High                | MINOR                            |
|                                               | Marine Mammals           | MODU circulation and surface handling operations (direct underwater noise disturbance) | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 4                 | 20                    | Negligible                 | High                | MINOR                            |
|                                               | Marine Mammals           | MODU circulation and surface handling operations (direct spatial disturbance)          | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 2                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |



| Environmental & Social Parameters | Valued Receptors | Project Activities / Elements                                                          | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|------------------|----------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
|                                   | Marine Mammals   | MODU circulation and surface handling operations (direct discharges impacts)           | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Marine Mammals   | MODU circulation and surface handling operations (indirect impacts)                    | -          | 1              | 1           | 3           | 2                | 1                  | 2            | 1           | 4                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
|                                   | Marine Mammals   | Removal of temporary subsea infrastructure (direct impacts)                            | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Marine Mammals   | Removal of temporary subsea infrastructure (indirect impacts)                          | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 4                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Marine Mammals   | ROV post operation seabed survey (direct impacts)                                      | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Marine Mammals   | ROV post operation seabed survey (indirect impacts)                                    | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | Cement plug installation and abandonment (direct impacts)                              | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | Cement plug installation and abandonment (indirect impacts)                            | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 1           | 1                | 1             | 1                 | 17                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | MODU circulation and surface handling operations (direct underwater noise disturbance) | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 4                 | 20                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | MODU circulation and surface handling operations (direct spatial disturbance)          | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 2                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | MODU circulation and surface handling operations (direct discharges impacts)           | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | MODU circulation and surface handling                                                  | -          | 1              | 1           | 3           | 2                | 1                  | 2            | 1           | 4                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |

| Environmental & Social Parameters | Valued Receptors | Project Activities / Elements                                                   | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|------------------|---------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
|                                   |                  | operations (indirect impacts)                                                   | -          |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |
|                                   | Sea Turtles      | Removal of temporary subsea infrastructure (direct impacts)                     | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | Removal of temporary subsea infrastructure (indirect impacts)                   | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 4                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | ROV post operation seabed survey (direct impacts)                               | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | ROV post operation seabed survey (indirect impacts)                             | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | Cement plug installation and abandonment                                        | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | MODU circulation and surface handling operations (direct - UWN)                 | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | MODU circulation and surface handling operations (direct - Spatial disturbance) | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | MODU circulation and surface handling operations (direct - Discharge)           | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | MODU circulation and surface handling operations (indirect)                     | -          | 1              | 1           | 3           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 15                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | Removal of temporary subsea infrastructure                                      | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | ROV post operation seabed survey                                                | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Avifauna         | MODU circulation and surface handling operations (collisions)                   | -          | 2              | 8           | 4           | 2                | 1                  | 2            | 4           | 1                | 3             | 1                 | 40                    | Low                        | Medium              | MINOR                            |
|                                   | Avifauna         | MODU circulation and surface handling operations (increased)                    | -          | 2              | 8           | 4           | 2                | 1                  | 2            | 4           | 1                | 3             | 1                 | 40                    | Low                        | Medium              | MINOR                            |

| Environmental & Social Parameters | Valued Receptors                                         | Project Activities / Elements                                              | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|----------------------------------------------------------|----------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
|                                   |                                                          | energy cost/ exhaustion/ starvation)                                       |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |
|                                   | Avifauna                                                 | MODU circulation and surface handling operations (resting/ roosting sites) | +          | 2              | 8           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 37                    | Low                        | Medium              | POSITIVE                         |
|                                   | Other important natural areas                            | As per marine mammals, sea turtles and fish fauna                          |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |
| Anthropogenic Environment         | Spatial Planning and Land Use                            | Dismantling and removal from the port area                                 | +          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 4                | 2             | 1                 | 26                    | Low                        | Medium              | POSITIVE                         |
| Anthropogenic Environment         | Spatial Planning and Land Use                            | Removal of helicopter hangar                                               | +          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 4                | 2             | 1                 | 26                    | Low                        | Medium              | POSITIVE                         |
| Anthropogenic Environment         | Maritime uses                                            | Cement plug installation and abandonment                                   | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Anthropogenic Environment         | Maritime uses                                            | MODU circulation and surface handling operations                           | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Anthropogenic Environment         | Maritime uses                                            | Removal of temporary subsea infrastructure                                 | +          | 2              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 25                    | Low                        | High                | POSITIVE                         |
| Anthropogenic Environment         | Maritime uses                                            | Dismantling and removal from the port area                                 | +          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 4                | 2             | 1                 | 26                    | Low                        | High                | POSITIVE                         |
| Anthropogenic Environment         | Structure and Functions of the Anthropogenic Environment |                                                                            |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |
| Anthropogenic Environment         | Cultural Heritage                                        | ROV post-operation seabed survey                                           | +          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 22                    | Low                        | High                | POSITIVE                         |
| Socio-economic environment        | Economic activities                                      | Dismantling and removal from the port area                                 | +          | 2              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 2             | 1                 | 20                    | Negligible                 | High                | POSITIVE                         |
| Socio-economic environment        | Economic activities                                      | Waste contractor collections (all wastes)                                  | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Economic activities                                      | Removal of helicopter hangar                                               | +          | 2              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 2             | 1                 | 20                    | Negligible                 | High                | POSITIVE                         |
| Socio-economic environment        | Community H&S                                            | Dismantling and removal from the port area                                 | +          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 2             | 1                 | 17                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S                                            | Waste contractor collections (all wastes)                                  | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S                                            | Removal of helicopter hangar                                               | +          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 2             | 1                 | 17                    | Negligible                 | High                | MINOR                            |
| Social Infrastructure             | Social Infrastructure                                    |                                                                            |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |

| Environmental & Social Parameters | Valued Receptors                            | Project Activities / Elements                    | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |            |
|-----------------------------------|---------------------------------------------|--------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|------------|
| Technical Infrastructure          | Maritime Infrastructure                     | Removal of temporary subsea infrastructure       | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 21                    | Low                        | High                | MODERATE                         | MINOR      |
| Technical Infrastructure          | Maritime Infrastructure                     | Dismantling and removal from the port area       | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 21                    | Low                        | High                | MODERATE                         | MINOR      |
| Technical Infrastructure          | Other transport infrastructure              | Dismantling and removal from the port area       | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 21                    | Low                        | Medium              | MINOR                            | MINOR      |
| Technical Infrastructure          | Other transport infrastructure              | Waste contractor collections (all wastes)        | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 21                    | Low                        | Medium              | MINOR                            | MINOR      |
| Technical Infrastructure          | Technical Infrastructure (Energy, Telecoms) | Dismantling and removal from the port area       | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       | NEGLIGIBLE |
| Technical Infrastructure          | Technical Infrastructure (Environmental)    | Waste contractor collections (all wastes)        | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       | NEGLIGIBLE |
| Atmospheric Environment           | Air quality                                 | MODU circulation and surface handling operations | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 1                 | 23                    | Low                        | Medium              | MINOR                            | MINOR      |
| Acoustic Environment, Vibrations  | Airborne noise                              | MODU circulation and surface handling operations | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 21                    | Low                        | Medium              | MINOR                            | MINOR      |
| Acoustic Environment, Vibrations  | Airborne noise                              | Dismantling and removal from the port area       | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       | NEGLIGIBLE |
| Acoustic Environment, Vibrations  | Underwater noise                            | Cement plug installation and abandonment         | -          | 2              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 24                    | Low                        | High                | MODERATE                         | MINOR      |
| Acoustic Environment, Vibrations  | Underwater noise                            | MODU circulation and surface handling operations | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR      |
| Acoustic Environment, Vibrations  | Underwater noise                            | Removal of temporary subsea infrastructure       | -          | 2              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 24                    | Low                        | High                | MODERATE                         | MINOR      |
| Acoustic Environment, Vibrations  | Vibrations                                  | MODU circulation and surface handling operations | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 22                    | Low                        | Low                 | NEGLIGIBLE                       | NEGLIGIBLE |
| Acoustic Environment, Vibrations  | Vibrations                                  | Dismantling and removal from the port area       | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 22                    | Low                        | Low                 | NEGLIGIBLE                       | NEGLIGIBLE |
| Radiation emissions               | Electromagnetic radiation                   | MODU circulation and surface handling operations | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | Low                 | NEGLIGIBLE                       | NEGLIGIBLE |

| Environmental & Social Parameters | Valued Receptors              | Project Activities / Elements                    | Nature (S) | Intensity (IN) | Extent (Ex) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |            |
|-----------------------------------|-------------------------------|--------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|------------|
| Water resources                   | Seawater                      | MODU circulation and surface handling operations | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 24                    | Low                        | High                | MODERATE                         | MINOR      |
| Water resources                   | Seawater                      | Removal of temporary subsea infrastructure       | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 24                    | Low                        | High                | MODERATE                         | MINOR      |
| Water resources                   | Surface water and groundwater | Waste contractor collections (all wastes)        | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | Low                 | NEGLIGIBLE                       | NEGLIGIBLE |

## 2.9 Assessment of cumulative/synergistic effects

This section assesses the likelihood that the impacts of the Project will interact with or be added to the impacts of other existing, approved or planned permitted and/or planned projects and/or activities in the wider northern Ionian Sea and adjacent coastal areas. The assessment focuses on activities that may overlap with the Project spatially and/or temporally, or that may affect the same environmental and social receptors, namely marine water quality, seabed habitats, marine fauna, fisheries, shipping, air quality, underwater noise, technical infrastructure and existing marine uses.

The assessment takes into account the current framework for maritime spatial planning, existing maritime uses and anticipated offshore activities in the wider study area. The project area is located within Spatial Unit 4 of the National Spatial Strategy for the Maritime Space (NSSMS); given that the detailed Maritime Spatial Planning Frameworks for this unit have not yet been finalised, the cumulative assessment was also based on existing national, regional and sectoral spatial planning instruments relating to shipping, fisheries, aquaculture, tourism, offshore infrastructure, renewable energy sources (RES) and, in particular, offshore wind farms currently at the licensing and development stage within the Italian EEZ, as well as development areas on the Greek side that are at the programme approval stage, and the development of the energy sector.

### 2.9.1 Commercial shipping, ferry services and international shipping

Commercial shipping and maritime traffic are among the main existing maritime uses with the potential to interact with the Project during its implementation period. The Ionian Sea is an important maritime corridor linking the Adriatic Sea, the central Mediterranean, the Suez Canal route and the wider Black Sea region, whilst existing traffic includes cargo ships, tankers, international passenger ferries, cruise ships and other commercial traffic, particularly along the routes linking the Italian ports on the Adriatic with Igoumenitsa, Patras and other Greek ports. Furthermore, in the context of the most recent geopolitical developments in the Persian Gulf and the Middle East (military operations in the south-eastern Mediterranean and the Persian Gulf), the Adriatic Sea is also used by warships. The maritime area west of Corfu, including the wider area of Section 2, falls within a zone of moderate to high shipping traffic, although the regional shipping lanes with the highest density are concentrated further west of Corfu and follow a broader north-west to south-east direction.

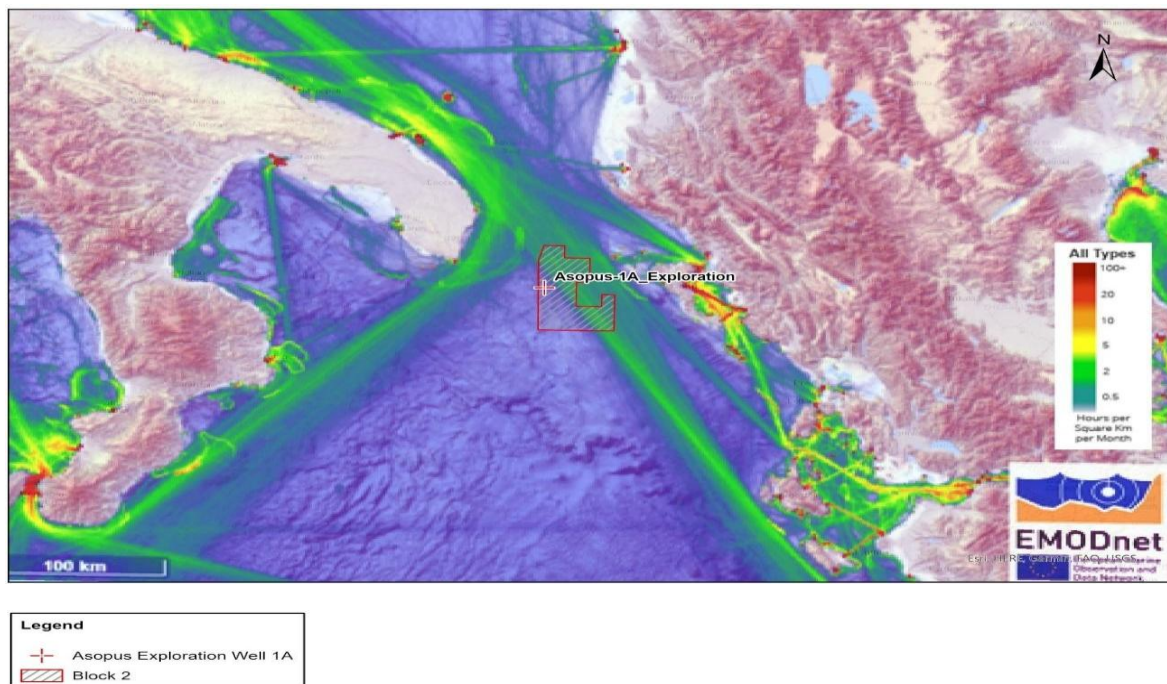


Figure 2-1: Average shipping traffic density (all vessel types), 2017–2024, in the Ionian Sea and the wider project area

The Project may interact cumulatively with these activities through the establishment of the 500 m safety zone, the temporary presence of the floating drilling unit and the movements of support vessels between the Port of Igoumenitsa and the location of the exploratory well

‘Asopos-1’. These interactions may require temporary notification of passing vessels regarding their route and could marginally increase local maritime traffic during mobilisation, drilling support and demobilisation (de-mobilisation). However, given the short-term and spatially limited nature of the Project, as well as the maritime safety measures to be implemented – including Notices to Mariners, NAVTEX messages, vessel coordination procedures and standard maritime safety practices – the cumulative impacts on commercial shipping and ferry services are expected to be minor, temporary and reversible.

Potential synergistic effects may arise when the movements of the Project’s vessels coincide with existing traffic of cargo ships, tankers or cruise ships, particularly in adverse weather conditions or when visibility is reduced. These impacts, however, are operational rather than environmental in nature and will be addressed through maritime coordination and navigation safety procedures. Consequently, no significant cumulative impact on international shipping is anticipated.

## 2.9.2 Commercial fishing and fishing grounds

Cumulative impacts on fisheries may arise when pressures associated with the Project are added to existing pressures from commercial fishing vessels operating in or transiting through the wider western Ionian Sea region. The main pressures common to both activities are underwater noise, the presence of vessels, artificial lighting, atmospheric emissions, minor discharges and local disturbance to marine fauna and seabed conditions.



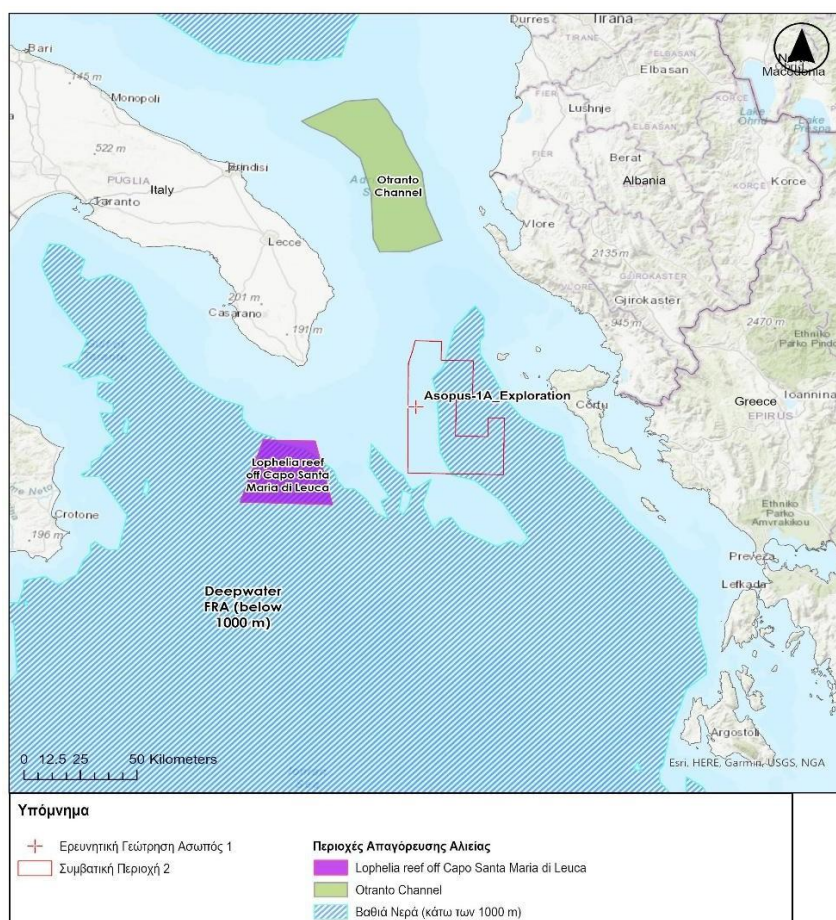


Figure 2-2: GFCM restricted fishing areas in the wider project area<sup>5</sup>

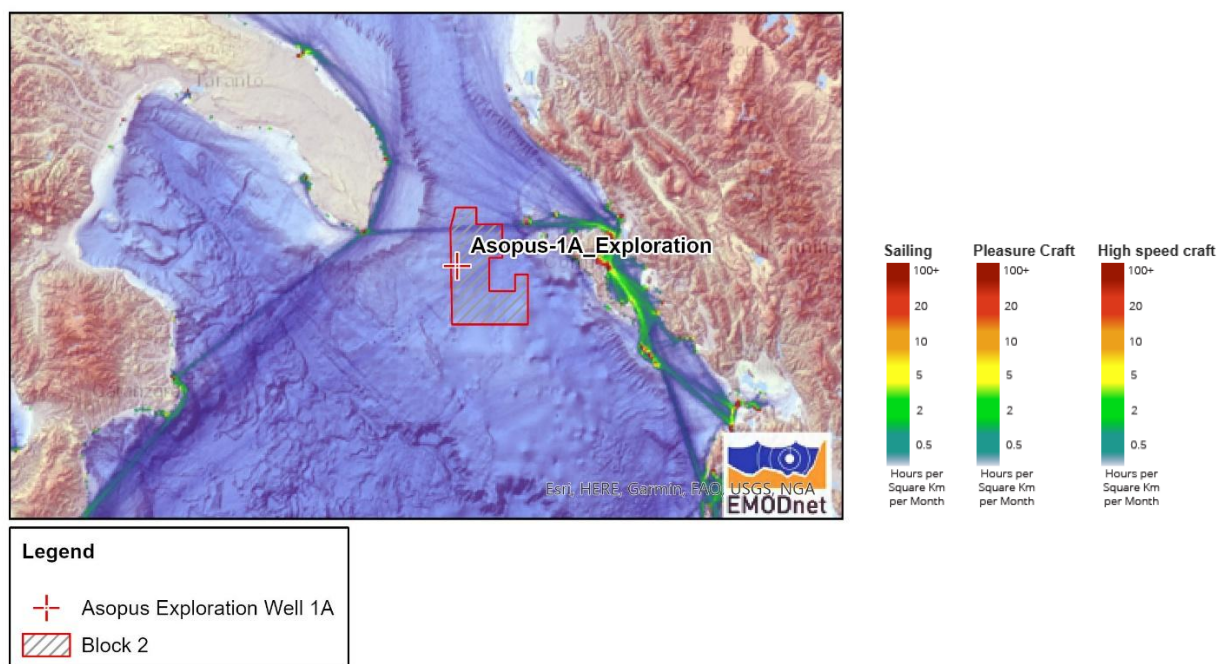
During the drilling campaign, the floating drilling rig and support vessels may temporarily increase overall vessel activity and underwater noise levels in the area surrounding the 'Asopos-1' exploration well site. Where this coincides with fishing vessel activity, it may cause short-term cumulative disturbance to marine fauna, mainly due to vessel noise, manoeuvres, lighting and human activity. Fishing activities may also cause local disturbance to the seabed or resuspension of sediments, which could exacerbate the local impacts of discharges associated with the Project's exploratory drilling and interaction with the seabed.

Synergistic effects are considered likely to occur when fishing activities and Project operations take place simultaneously and affect the same receptors, primarily marine fauna and the complexity of navigation, as the combined presence of fishing vessels, support vessels and the safety zone around the floating drilling unit could temporarily increase disturbance or operational pressure in the immediate offshore area. However, such impacts would be highly localised and short-term. Given that the bulk of fishing activity in the wider western Ionian Sea is concentrated mainly in coastal waters, whilst the Project's footprint is limited to a temporary offshore area of operations, the cumulative and synergistic impacts on fisheries are expected to be negligible to minor, temporary and reversible.

<sup>5</sup> <https://www.fao.org/gfcm/data/maps/fras/en/> (edited by: LDK)

### 2.9.3 Maritime tourism, recreational boating and cruises

Maritime tourism and recreational boating, including the hire of recreational craft and sailing, coastal cruises, recreational boating and cruising, are well established throughout the wider Ionian Sea, concentrated mainly around Corfu, Paxos, Antipaxos, the Diapontia Islands and the coast of Epirus (Error! Reference source not found. ). The main recreational boating routes are in coastal and inter-island waters, whilst the 'Asopos-1' exploratory well is located in offshore waters some distance from the main areas of concentration and movement.



**Figure 2-3:** Density of sailing, recreational and high-speed vessels (Annual average 2017–2024)<sup>6</sup>

A potential cumulative interaction could arise in cases where pleasure craft or cruise ships undertake longer offshore voyages between Greece and Italy and pass through the wider Project area; such interactions would be limited to temporary awareness of vessel movements and avoidance of the 500-metre safety zone. The Project is not expected to affect the main recreational sailing routes, coastal cruise areas, approaches to cruise ports or tourist destinations.

Potential synergistic effects could arise if shipping traffic associated with the Project coincides with the peak tourist season, when the density of recreational craft is highest throughout the Ionian region. However, given that recreational activity is mainly concentrated in the coastal zone, whilst the Project is located offshore, these impacts are expected to be limited. No significant cumulative or synergistic impacts on marine tourism, recreational activities or cruises are anticipated.

### 2.9.4 Aquaculture activities

<sup>6</sup> <https://EMODnet.ec.europa.eu/geoviewer/>

Aquaculture is an established but spatially limited marine use within the wider study area. Marine fish farming takes place along the north-eastern coast of Corfu and the coastline of Thesprotia, including designated or planned aquaculture development areas. These activities are concentrated in protected coastal waters and are spatially distinct from the open waters of Section 2 and the proposed location of the 'Asopos-1' borehole. There are no aquaculture facilities, nor are any planned, within the Project's onshore support area at the Port of Igoumenitsa. The distribution of aquaculture facilities within the wider study area is shown in the Figure below.

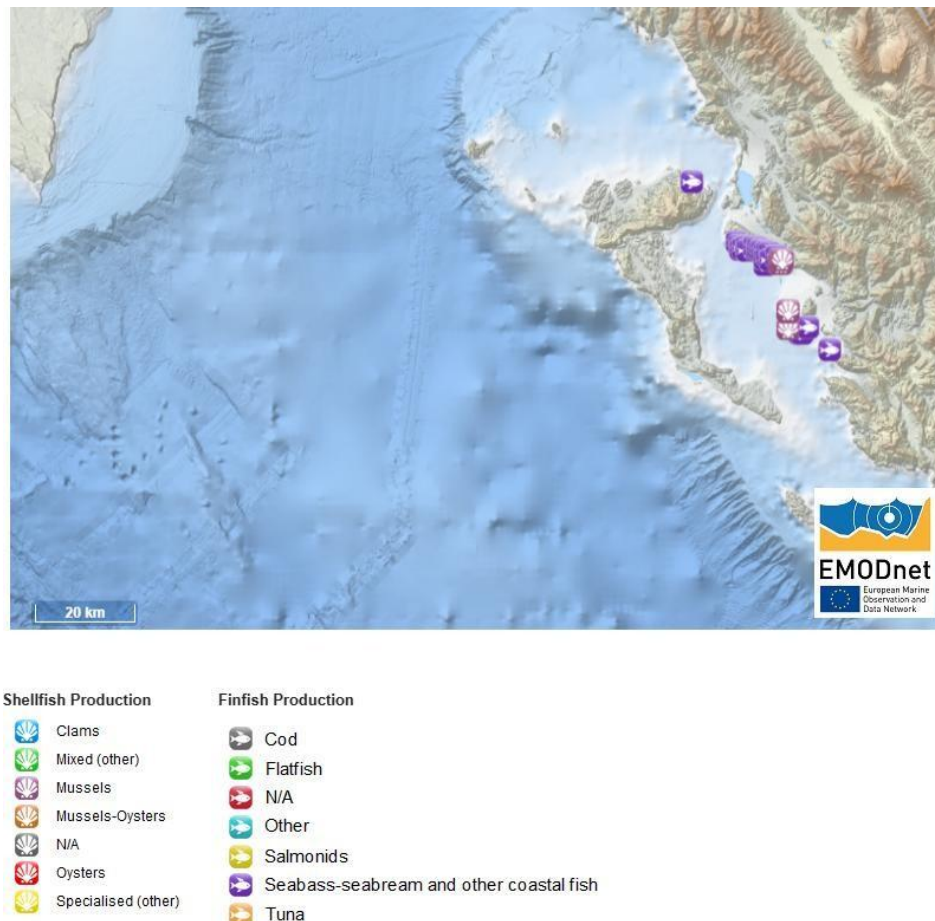


Figure 2-4: Distribution of aquaculture facilities in the wider study area <sup>7</sup>

Potential cumulative impacts could include changes in seawater quality, interactions with vessel traffic or incidents of accidental pollution. However, routine discharges from the boreholes will take place offshore and are expected to be rapidly diluted and dispersed, whilst the Project's support activities rely on existing maritime access routes and existing port facilities. Given that the location of the exploratory well is a considerable distance from existing aquaculture areas, with no direct spatial overlap, no significant cumulative impact is expected.

Potential synergistic impacts on aquaculture would only be possible in the event of a major accidental spill capable of reaching coastal waters, provided that no mitigation measures are taken. Such scenarios do not fall within the scope of normal operations and are addressed separately through emergency preparedness,

<sup>7</sup> <https://EMODnet.ec.europa.eu/geoviewer/>

oil spill contingency planning and the assessment of accidental events. Under normal operating conditions, no significant cumulative or synergistic effects on aquaculture are expected.

### 2.9.5 Submarine telecommunications and power cables

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Submarine cables constitute a permanent technical infrastructure of strategic importance in the Ionian Sea. Various international telecommunications cable systems connect Greece, Italy and other Mediterranean countries, whilst submarine electricity infrastructure also exists in the wider region, concentrated along corridors crossing the central and southern Ionian basin between the coasts of Italy and Greece. The spatial analysis carried out for the Project has identified three cable systems within the study area that are directly relevant to the Project:

- Eagle (under planning), a new trans-Mediterranean cable system connecting Egypt, Albania and Italy;
- Jonah (in operation since 2012), which connects Israel and Italy via the Eastern Mediterranean and the Ionian Sea;
- Asia Africa Europe-1 (AAE-1) (in operation since 2017), a major international telecommunications cable system linking Asia, Africa and Europe, with landing points including Bari (Italy).

Their location in relation to the 'Asopos-1A' exploratory well is shown in the Figure below.



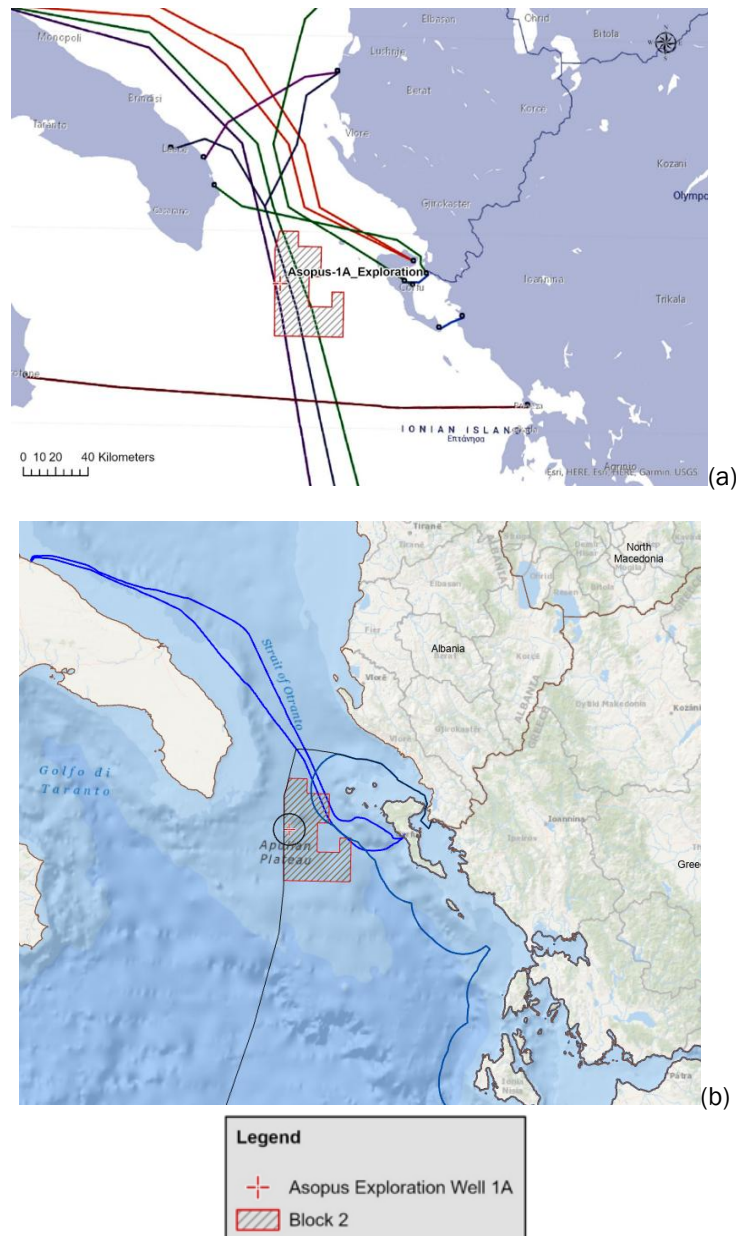


Figure 2-5: Subsea cables in relation to the project area: (a) Eagle, Jonah,<sup>8</sup> and (b) OTEGlobe Kokkini-Bari subsea cable systems

The location of the ‘Asopos-1’ exploratory well is at least 2,692 m from the cables identified within the study area, the nearest being the AAE-1 cable on the south-western side of the area investigated. The assessment took into account the potential for interaction with this infrastructure, particularly with regard to seabed disturbance, the location of the floating drilling unit, the operations of support vessels and emergency response activities.

The Project does not involve anchoring, trenching, the installation of pipelines or permanent subsea infrastructure. The floating drilling unit will operate using dynamic positioning, and the drilling area is limited to the well site and the immediate operational area. The cable routes will be verified against official nautical charts prior to works and, where required, against information provided by cable operators. Provided that

<sup>8</sup> <https://www.submarinecablemap.com>

standard avoidance and notification procedures are followed, no cumulative impact on subsea cable infrastructure is anticipated.

Potential synergistic effects may arise if the activities of the Project's support vessels, other marine works or emergency operations coincide near the cable corridors. However, given that no seabed intervention is planned along the cable routes and no cable route is expected to cross the operational area, such impacts are considered unlikely and insignificant.

## 2.9.6 Offshore oil and gas installations

The available mapped data on existing offshore oil and gas installations in the wider region indicate that the nearest identified installations are located at a distance of approximately 150 km or more from the proposed location of the 'Asopos-1', concentrated mainly along the Italian coast and in more remote parts of the Adriatic and the central Mediterranean. No comparable operational offshore oil and gas installations have been identified in the immediate vicinity of the area where the exploratory well 'Asopos-1'



Figure 2-6: Offshore oil and gas installations (source: EMODnet)

Potential cumulative interactions with other offshore oil and gas exploration and/or production activities may include atmospheric emissions, underwater noise, vessel traffic, discharges at sea and interactions during emergency response operations. In practice, these routes are not expected to result in significant cumulative impacts, given the considerable distance separating the nearest identified installations from the location of the 'Asopos-1' exploration well. The work involved in the 'Asopos-1' exploration well will be of short duration and will be limited exclusively to exploration, without production testing, gas flaring, permanent installations, subsea production infrastructure, etc. Any overlap in terms of emissions, underwater noise, vessel activity

or marine discharges with existing offshore oil and gas activities is therefore expected to be very limited, temporary and insignificant.

Similarly, it is considered unlikely that any potential synergistic effects will arise, as operational pressures from existing offshore oil and gas installations are not expected to overlap spatially with the area where the exploratory drilling operations for 'Asopos-1' in such a way as to affect the same receptors simultaneously. Consequently, no significant cumulative or synergistic impact is anticipated in relation to existing offshore oil and gas activities.

### 2.9.7 Offshore wind energy, ocean energy and other offshore renewable energy sources

Renewable energy projects in the open sea, in particular offshore wind energy, are considered to be reasonably foreseeable activities in the wider Ionian Sea and the Greek maritime area. Greece has established a specific regulatory framework for the development of offshore wind farms under Law 4964/2022, under which EDEYEP has been designated as the authority responsible for the planning and management of the development programme, as well as for the designation of Organised Development Areas for Offshore Wind Farms (POAYAP). The draft National Programme for the Development of Offshore Wind Farms (EP-YAP), which was drawn up by EDEYEP and is accompanied by a Strategic Environmental Assessment (SEA, LDK, 2023), identifies a series of initially assessed POAYAPs for medium- and long-term development. In the Ionian Sea, this includes the Diapontia Islands area, which is among the potential areas identified for medium-term development in the draft programme. It should be noted, however, that although the public consultation process for this EIA has been completed and the relevant recommendations regarding environmental conditions have been issued, the relevant Joint Ministerial Decision (JMD) for approval is still pending, which means that the POAYAPs are not certain to be among the final options when and if it is issued.

This Special Area of Conservation is situated north-west of Corfu and is relevant to the Project, given its proximity to the location of the 'Asopos-1' and its potential interaction with existing maritime uses in the wider region of Corfu and the northern Ionian Sea. The area was identified in the EP-YAP plan as a potential site for the development of offshore wind farms; however, as mentioned above, it is not an operational or licensed offshore wind farm.

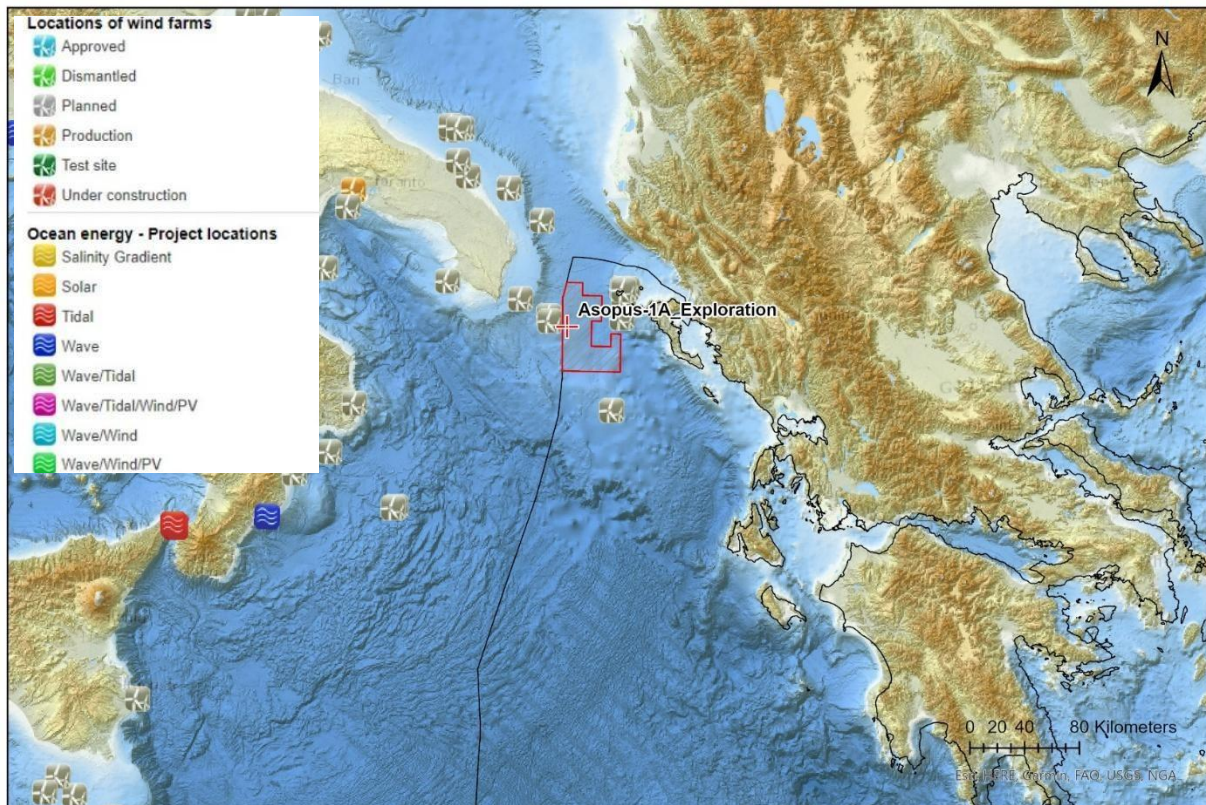
At the time of the assessment, the NDP-OWF had not yet been formally approved, and the subsequent stages required to define specific OWFODAs, allocate development capacity, select developers through a competitive process and obtain project authorisation had not been completed.

Consequently, and overall, there is no sufficiently defined or approved offshore wind energy project in the area of the 'Asopos-1', for which it could reasonably be expected that its construction or operation would overlap with the approximately 90-day exploratory drilling campaign.

The offshore wind farm in the Diapontia Islands remains at the planning stage – initially involving the selection of a broader development area – and the exact boundaries, its design, licensing, contractor and construction programme have not yet been finalised; consequently, the likelihood of temporal and spatial overlap with the Project is currently considered to be zero.



The possibility of cumulative impacts from offshore wind energy projects in adjacent Italian waters has also been examined; such impacts would mainly concern navigation, vessel traffic, fishing, underwater noise and the coordination of emergency response. Given the geographical distance from the Project and the absence of any identified construction or operational activities expected to overlap with the Project period, no significant cumulative or synergistic impacts are anticipated. Most other mapped offshore wind farm and ocean energy projects are located considerably further away, mainly along the Italian coastline and elsewhere in the central Mediterranean.



**Figure 2-7: Offshore wind farms and marine energy projects (Source: EMODnet)**

As no existing or even under-construction offshore wind farm or marine energy project has been identified in the immediate vicinity of the Project, no current cumulative interaction is expected. Should offshore renewable energy projects proceed in the wider area in the future, potential cumulative impacts may arise in relation to vessel traffic, seabed disturbance, underwater noise, the displacement of fishing activities, maritime spatial planning, the coordination of emergency response, and visual or navigational aspects.

Potential cumulative impacts could arise in the future if construction activities for offshore renewable energy sources – such as seabed preparation, cable laying or wind turbine foundation works – were carried out simultaneously with exploratory drilling or other offshore activities, with potential impacts on marine fauna, fisheries and shipping. However, based on the current status of the mapped projects and the short duration of the work involved in the ‘Asopos-1’ exploratory drilling ‘Asopos-1’, no significant cumulative or synergistic impacts are anticipated at this stage in relation to offshore renewable energy projects.

### 2.9.8 Port activities in Igoumenitsa and land-based support base

The Port of Igoumenitsa is an established international passenger and commercial port. The Project will utilise the existing port infrastructure as a temporary land-based base for mobilisation, resupply, waste disposal, equipment storage, administrative functions and demobilisation – activities which will take place within an existing operational port environment where similar transport, storage, cargo handling and logistics activities are routinely carried out.

The Project will not require any new permanent port infrastructure, port expansion, dredging, land reclamation or upgrades/works to utility networks. Waste will be managed through the Project's Waste Management Plan and by suitably licensed contractors, and not through municipal waste collection or treatment systems. Consequently, the cumulative impacts on port traffic, port infrastructure, cargo handling, vehicle movements, energy and telecommunications networks, as well as environmental infrastructure (including waste transport), are expected to be negligible to minor and temporary.

Potential synergistic impacts may arise when the Project's supply chain coincides with peak periods in ferry operations, commercial freight movements, tourism-related port traffic or other temporary port activities. These interactions will mainly concern operational coordination, traffic management and temporary congestion, rather than long-term environmental impacts, whilst no significant synergistic effect is expected from the port's usual management and planning procedures.

### 2.9.9 Military exercise areas and restricted-access maritime zones

Military exercise areas and temporary restricted-access maritime zones are relevant to offshore activities, as they may impose temporary restrictions on navigation or offshore activities. According to information provided by the Hellenic Navy Hydrographic Service, there are no permanently designated exercise areas, nor are there any temporary restricted-access or exclusion zones currently in force via NAVTEX broadcasts and/or Notices to Mariners (NtMs) within the boundaries of Section 2.

Consequently, no cumulative interaction between the Project and the military exercise areas is currently anticipated. Should temporary military restrictions be imposed during the drilling operations, any potential interactions will be addressed through standard maritime coordination procedures and operational planning. No significant cumulative or synergistic effects are anticipated under current conditions.

### 2.9.10 Combined synergistic effects on shared receptors

In addition to the cumulative impacts specifically related to the activity, the assessment examined whether multiple pressures could be exerted simultaneously on the same receptor.

#### Marine fauna

Potential synergistic factors include the combined effect of underwater noise from the floating drilling unit, the dynamic positioning system, support vessels and existing commercial shipping, combined with the presence of vessels, lighting and temporary disturbance. These pressures may lead to temporary avoidance behaviour by sensitive marine species, particularly marine mammals and sea turtles. However, given the absence of noise from pile driving or long-term construction noise, the temporary nature of the drilling campaign and the offshore location of the well, the likelihood of significant cumulative effects is limited.

### Air quality and climate change

Potential cumulative effects relate to the combined emissions from the floating drilling rig, support vessels, helicopters, port activities and existing regional shipping, which collectively contribute to regional air pollutant loads and global greenhouse gas emissions. However, the project's emissions are temporary, occur offshore and are dispersed under open-sea weather conditions.

### Users of maritime transport

Potential synergistic effects may arise where the temporary safety zone, the movements of project vessels, commercial shipping, fishing activities and recreational boating occur simultaneously. These impacts will be managed through maritime notifications, coordination with the relevant authorities and standard vessel traffic procedures. Given that the safety zone will be of limited size and the operational period short, the combined impacts on access and navigation are expected to be minor.

Overall, the Project is likely to interact cumulatively with existing shipping, fishing, offshore routes, port logistics, subsea infrastructure and foreseeable offshore energy developments, with potential synergistic effects relating primarily to underwater noise, vessel traffic, atmospheric emissions and the temporary displacement of fishing activities. However, given the temporary nature of the exploratory drilling campaign, the absence of permanent offshore infrastructure, the limited spatial footprint, the use of existing logistics infrastructure and the implementation of mitigation and management measures, the Project is not expected to cause significant cumulative or synergistic impacts. The remaining cumulative and synergistic impacts are assessed as negligible to minor, local, temporary and reversible.

## 2.10 Assessment of transboundary environmental impacts

In accordance with the Espoo Convention, the UNECE Practical Guide on the Implementation of the Espoo Convention and the EU Directive on Environmental Impact Assessment (Directive 2011/92/EU, as amended by Directive 2014/52/EU), the assessment adopted a precautionary approach when evaluating potential transboundary impacts. Should the competent authority consider that the Project is likely to cause significant adverse transboundary impacts, or should a potentially affected Party request to participate, the procedures for formal notification, exchange of information, consultation and public participation provided for in the Espoo Convention shall apply before any final decision on the Project is taken. This will ensure that all potentially affected Parties have an adequate opportunity to examine the environmental information, submit comments and participate in the decision-making process.

### 2.10.1 Geographical boundaries of the area of operation

The 'Asopos-1' exploration well is located within Area 2 of the Greek Exclusive Economic Zone (EEZ) in the northern Ionian Sea, under Greek jurisdiction. The Project comprises both offshore and onshore components, including offshore drilling operations carried out by the Floating Drilling Unit, maritime logistics between the drilling site and the Port of Igoumenitsa, helicopter transfers between Corfu International Airport and the floating drilling unit, as well as the temporary logistics support facilities that have been set up within the Port of Igoumenitsa.

The offshore operations area is situated in the immediate vicinity of the internationally agreed maritime boundary between Greece and Italy. The drilling site is situated approximately 3.16 km (1.71 nautical miles) east of the boundary of the Greece–Italy Exclusive Economic Zone (EEZ), which makes Italy the nearest potentially affected party under the Espoo Convention.

The nearest Italian coastline is Punta Ristola (Santa Maria di Leuca) in the region of Apulia, which is situated approximately 54.9 km (29.7 nautical miles) west of the proposed drilling location. The nearest Greek mainland is the western coast of the island of Othoni, approximately 44.3 km (23.9 nautical miles) from the drilling site. Logistical support for the offshore operations will be provided from the port of Igoumenitsa, which is situated approximately 129.4 km from the drilling site by sea, whilst helicopter transfers will take place between Corfu International Airport and the mobile drilling unit (MODU), a distance of approximately 81.9 km as the crow flies.

The geographical scope of the transboundary assessment extends beyond the immediate footprint of the Project and takes into account the wider marine environment of the northern Ionian Sea, including the adjacent Italian EEZ. Marine currents, atmospheric dispersion, vessel movements and accidents are not confined by administrative boundaries. Consequently, the assessment examines both the direct and indirect pathways through which the Project's activities could potentially affect environmental receptors located within Italian jurisdiction.

Given the relatively short distance from the international maritime border, transboundary aspects have been integrated throughout the EIA, adopting a precautionary and conservative approach, despite the expectation that the Project's normal activities will remain at a highly local level.

A statutory safety zone of 500 m will be established around the floating drilling unit throughout the duration of drilling operations and the decommissioning of the well, in accordance with the United Nations Convention on the Law of the Sea (UNCLOS), applicable Greek legislation and internationally accepted safety practices on the high seas. The safety zone will be centred on the drilling rig and will remain entirely within Greek jurisdiction. Access to the exclusion zone will be restricted to authorised Project vessels and personnel engaged in drilling operations, logistical support, emergency response or regulatory inspections.

Prior to the commencement of operations, the relevant authorities will issue appropriate Notices to Mariners, navigation warnings and updates to hydrographic publications, in order to inform merchant vessels, fishing vessels and other maritime users regarding the temporary exclusion zone. The vessel traffic management procedures to be implemented as part of the Project will ensure safe interaction with existing shipping routes and minimise disruption to international shipping.

The safety zone will cover only a small area compared with the surrounding marine environment and will apply only for the duration of the drilling and abandonment works. Consequently, no significant restrictions on international shipping or fishing activities within Italian waters are expected.

## 2.10.2 Expected transboundary environmental impacts

The assessment systematically examined all possible pathways through which the Project's activities could cause transboundary environmental impacts, taking into account the location of the Exploration Well at a distance of approximately 3.16 km from the boundaries of the Greek-Italy, the temporary nature of the drilling campaign, the characteristics of the host environment, and the natural processes governing the transport



and dispersion of pollutants in the marine and atmospheric environments. The assessment also took into account the nature, magnitude, spatial extent, duration and reversibility of the potential impacts, as well as the built-in mitigation measures included in the Project's design.

The environmental impacts associated with the Project are primarily short-term and temporary, reflecting the exploratory nature of the activity. The impacts are limited to the duration of mobilisation, drilling, well abandonment and demobilisation, and include temporary underwater noise, gas emissions during operations, vessel traffic, limited disturbance to the seabed, routine marine discharges and temporary occupation of the drilling site. These impacts will cease once drilling operations have been completed and the floating drilling unit has been removed.

#### 2.10.2.1 Seawater quality

Routine discharges include drilling fluids – water-based muds and drilling cuttings, cooling water, desalination brine, ballast water, sanitary effluent, food waste and other permitted operational discharges managed in accordance with applicable international and national requirements.

The assessment took into account the physical and chemical characteristics of these discharges, as well as the prevailing hydrodynamic conditions, dilution and dispersion processes. These materials are discharged in accordance with the applicable regulatory requirements and undergo rapid dilution and dispersion within the receiving marine environment.

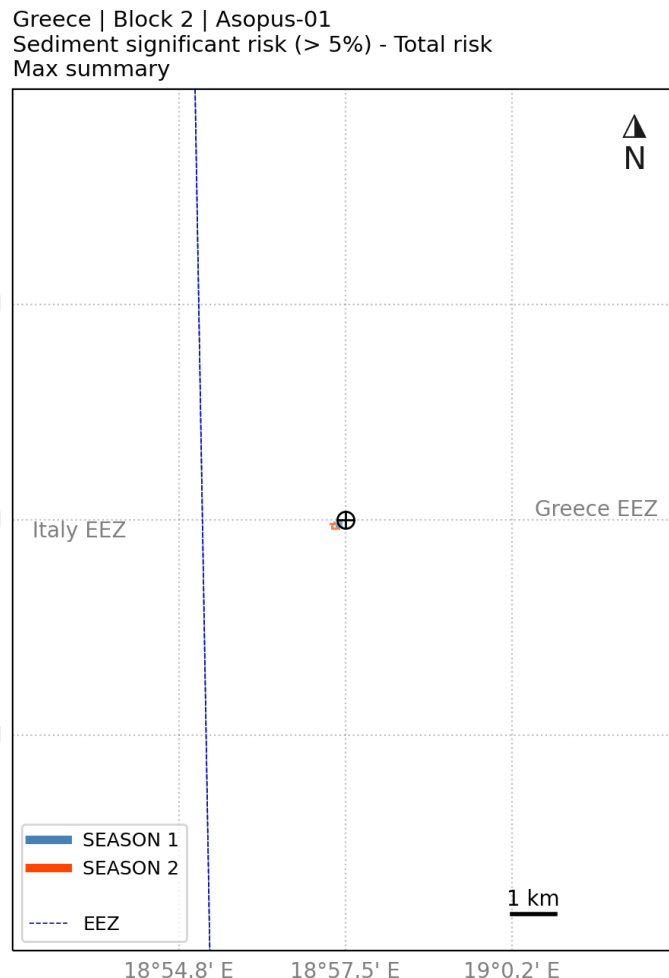
Numerical modelling of drilling discharges into the water column / seawater predicts a relatively extensive but temporary dispersion area which, in some cases, may exceed the distance between the drilling site and the Italian EEZ, as mentioned previously in the relevant sections presenting the cuttings dispersion model. However, this scenario represents the maximum cumulative area in which a single cell of the model exceeded the control limit at any point during the 45-day simulation. It does not represent a continuous impact, nor does it represent an environmental burden.

Any such impact is expected to be temporary, reversible and limited to the discharge period and the short dispersion phase following discharge. The modelling concludes that environmental risks in the water column are expected to cease within a few days after the end of discharges from the well. Overall, there may be a temporary transboundary impact on marine water quality; however, this is expected to be short-term, be confined to the water column and not be associated with persistent contamination of sediments or long-term impacts on Italian waters.

#### 2.10.2.2 Seabed

Disturbance to the seabed has been assessed in relation to the installation of the riser, well drilling, cementing operations, the disposal of permitted drill cuttings and the temporary placement of subsea equipment. These activities result in an extremely localised physical disturbance confined to the immediate vicinity of the well site. The resuspension of sediments caused by drilling and the jetting of water to install the riser is expected to settle rapidly near the wellhead, whilst no dredging, dredging of the seabed or permanent infrastructure on the seabed.

Numerical modelling during drilling indicates that no transboundary impacts on seabed sediments within the Italian EEZ are expected. The predicted significant sediment risk is extremely localised around the discharge point, with a maximum extent of approximately 283 m during Season 1 (October to March) and 397 m during Season 2 (April to September). The simulated exceedances of the sediment sorting limit remained within the Greek EEZ in both scenarios assessed.



**Figure 2-8: Cumulative simulated exceedances of the sediment sorting limit in relation to the boundaries of the Greek and Italian EEZs**

Consequently, no significant cross-border impacts on seabed morphology or benthic habitats are anticipated. Overall, no significant cross-border impact on Italian seabed sediments is anticipated.

### 2.10.2.3 Underwater noise

Sound propagates effectively in the marine environment and may affect highly mobile marine species capable of crossing national maritime borders. Sources of noise include dynamic positioning thrusters, drilling equipment, support vessel operations, ROV activities and vertical seismic profiling (VSP).

The assessment took into account the temporary and intermittent nature of these activities, the relatively low noise levels during drilling operations compared with other offshore activities, and the mobility of marine fauna. Although individual animals may temporarily avoid the immediate vicinity of the drilling rig, no population-level impacts or significant transboundary impacts are anticipated. The underwater noise

generated during drilling operations attenuates with distance and is not expected to cause biologically significant impacts on a transboundary scale.

#### 2.10.2.4 Air quality

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Atmospheric emissions have been identified as a potential transboundary pathway, as combustion emissions from the floating drilling unit, support vessels, helicopters and onshore supply activities may be dispersed over significant distances, depending on prevailing meteorological conditions. The assessment took into account emissions of greenhouse gases and other atmospheric pollutants, including nitrogen oxides, sulphur oxides, carbon monoxide and particulate matter.

The exploratory drilling campaign will be temporary, and the main sources of emissions will be located offshore, at a considerable distance from coastal receptors. Emissions from the floating drilling rig, support vessels and helicopters will disperse rapidly over the open sea under prevailing meteorological conditions, reducing the likelihood of measurable changes in air quality beyond the immediate operational area. Furthermore, emission levels are limited by the short duration of the drilling campaign, the use of marine fuels that comply with current sulphur content requirements, and the absence of regular combustion sources, such as gas flaring, gas venting or combustion sources associated with production. Consequently, no significant transboundary impacts on air quality are expected.

Greenhouse gas emissions will gradually contribute to global climate change, but do not cause a discernible or measurable impact on air quality in the territory of a neighbouring state.

#### 2.10.2.5 Maritime and air traffic

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The project's vessels will operate within an area used by international commercial shipping in the northern Ionian Sea. Activities include the mobilisation (mob) and demobilisation (de-mob) of the floating drilling unit, the routine operations of supply vessels, the activities of standby vessels and the occasional presence of specialised support vessels. Temporary interactions with existing shipping lanes will be managed through the establishment of the 500-metre safety zone required by law, Notices to Mariners, NAVTEX broadcasts and standard maritime navigation procedures.

Given that the movements of the vessels will be temporary and will represent a minor addition to existing commercial shipping in the northern Ionian Sea, no significant cross-border impacts on international shipping are expected.

Helicopter flights include regular crew rotations, the delivery of critical equipment and emergency flights between Corfu International Airport and the offshore drilling rig. The frequency of flights is expected to remain relatively low and will generally follow established air routes and operational procedures. Helicopter flights will be limited in number, short in duration and directed exclusively to the offshore drilling unit. Consequently, helicopter flights are not expected to cause any transboundary environmental impacts.



## 2.10.2.6 Waste generation and management

All waste streams generated in the offshore area will be sorted on board, temporarily stored, transported to the onshore support base at the Port of Igoumenitsa, and subsequently transported by licensed contractors to authorised treatment, recovery or disposal facilities, in accordance with the Project's Waste Management Plan and the applicable legislation. There will be no deliberate discharge of waste beyond the permitted operational discharges regulated by the MARPOL Convention, and no cross-border transport of waste from the Project is envisaged. Consequently, routine waste management activities are not expected to cause any transboundary environmental impacts.

## 2.10.2.7 Accidental hydrocarbon spill

The main mechanism through which transboundary environmental impacts could arise would be via low-probability accidental events, in particular a significant hydrocarbon spill. Such scenarios have been assessed separately using specific oil spill modelling presented in Chapter 9. Although the probability of accidental events is very low, the assessment took into account scenarios involving marine diesel spills, chemical spills and loss of control of the wells, recognising that under certain combinations of wind, waves and currents, pollutants could potentially be carried beyond the Greek EEZ. Consequently, the scenarios were assessed separately on the basis of a precautionary approach, supported by oil spill modelling where appropriate, and taking into account the Project's preventive measures, well integrity systems, emergency response arrangements and the oil spill contingency plan. These assessments take into account potential spill trajectories, prevailing oceanographic conditions and response capabilities in accordance with recognised international practice.

With regard to the scenario of an instantaneous surface spill of marine gas oil (MGO) presented in section 10.2.3.1.1, the modelling indicates that any potential transboundary impacts would be limited and short-term. The movement of oil on the surface may occur in different directions depending on seasonal winds and currents; however, the highest probability of occurrence remains close to the site of the spill, and the affected area is limited due to the rapid degradation and evaporation of MGO.

Coastal pollution is predicted as a possibility outside Greek waters, with a low probability. In Phase 1, coastal pollution may occur in five countries between Croatia and Greece, whilst in Phase 2 it may occur in four countries. The highest predicted probability of coastal pollution is observed in Italy, reaching 5 per cent in Season 1 and 12.2 per cent in Season 2. The shortest predicted time to reach the coast is 2.8 days in Italy during Season 1. In all the above cases, the potential pollution at the percentages mentioned is expected only if no mitigation measures are taken, which in practice cannot happen, as the regulatory framework imposes a strong legal obligation to draw up an Emergency Response Plan (ERP), which must be submitted to the competent authorities for assessment and approval.

Overall, the MGO surface spill scenario is likely to cause limited cross-border impacts; however, these will be short-term, of short duration and significantly less severe than scenarios involving a prolonged release of hydrocarbons.

## 2.11 Addressing environmental and social impacts

**Table 2-5: Proposed mitigation measures for potential adverse environmental and social impacts during the drilling preparation and mobilisation phase of the project**

| ENVIRONMENTAL PARAMETERS                 | OBJECTIVE OF MEASURE                                          | MITIGATION MEASURES DURING DRILLING PREPARATION & MOBILISATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Climatic and Bioclimatic Characteristics | Minimise greenhouse gas emissions and air pollutant emissions | 1. Each Project Contractor shall maintain all machinery, vessels, and vehicles used in the Project according to manufacturer specifications to reduce exhaust emissions. Maintenance shall be carried out by the relevant contractor/owner in accordance with manufacturer schedules, at licensed onshore facilities where practicable.                                                                                                                                                                                                                  |
|                                          |                                                               | 2. The MODU and all support vessels shall comply with the requirements of MARPOL 73/78 Convention, Annex VI "Regulations for the Prevention of Air Pollution from Ships". Annex VI regulates emissions of ozone-depleting compounds, nitrogen oxides (NOX), sulfur oxides (SOx) and volatile organic compounds (VOCs).                                                                                                                                                                                                                                   |
|                                          |                                                               | 3. Energean shall coordinate with relevant Contractors, the Port Authority and Corfu International Airport to optimise support vessel and helicopter logistics through careful voyage planning, taking into account rig operational requirements, so as to minimise the number of vessel trips, reduce the duration of activities within the project area, and avoid unnecessary engine operation and idling, to the extent achievable within the operational constraints of each party involved.                                                        |
|                                          |                                                               | 4. Energean shall assess, in coordination with the Port of Igoumenitsa operator and relevant vessel operators, the feasibility of using existing shore-power facilities for Project vessels while alongside. Shore power may be used where existing infrastructure is available and compatible with the vessel, and where the necessary technical, safety, operational and commercial arrangements have been agreed between the relevant parties. The Project does not include installation or substantial upgrading of port shore-power infrastructure. |
|                                          |                                                               | 5. Use LED lighting for interior lighting, where practicable, and avoid unnecessary operation of external lighting.                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| ENVIRONMENTAL PARAMETERS                                 | OBJECTIVE OF MEASURE                                                                | MITIGATION MEASURES DURING DRILLING PREPARATION & MOBILISATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Morphological and Landscape Characteristics              | Minimise impacts on landscape characteristics, visual amenity and seabed morphology | 6. The Project shall use existing facilities within the Port of Igoumenitsa and Corfu International Airport. No new permanent onshore or offshore infrastructure, dredging, land reclamation or quay modifications shall be required. All activities shall remain within designated operational areas.                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                          |                                                                                     | 7. Onshore Project support activities at the Port of Igoumenitsa and Corfu International Airport shall be undertaken within the areas allocated or agreed for Project use by the relevant facility operator. Project equipment, materials, vehicles and wastes shall be stored, handled and parked only within designated areas, except when being transported in accordance with applicable logistics and waste-management arrangements. Unauthorised disposal or storage outside the designated Project areas shall be prohibited.                                                                                                                                                     |
|                                                          |                                                                                     | 8. The Project shall use the existing surfaced areas of the onshore logistics base, and no additional permanent impermeable surfacing is planned. If additional surfacing is subsequently required for safe Project operations, it shall be limited to the minimum necessary extent within the area allocated for Project use and shall be subject to prior agreement with the Port operator and any applicable approvals. Any reinstatement requirements shall be agreed with the Port operator.                                                                                                                                                                                        |
| Geological, Tectonic and Soil / Sediment Characteristics | Protect soil /sediment and prevent physical disturbance and contamination           | 9. Hazardous and non-hazardous wastes generated offshore shall be segregated, stored, handled and transferred to authorised shore reception or waste-management facilities in accordance with the Project Waste Management Plan and the applicable requirements of MARPOL, the Barcelona Convention and its Offshore Protocol, and EU and Greek legislation. No solid or hazardous waste shall be intentionally discharged to the marine environment. Operational discharges, including drilling fluids and cuttings, sewage, bilge water, ballast water and food waste, shall be managed in accordance with the relevant discharge-specific measures and applicable legal requirements. |

| ENVIRONMENTAL PARAMETERS | OBJECTIVE OF MEASURE                                            | MITIGATION MEASURES DURING DRILLING PREPARATION & MOBILISATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------|-----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          |                                                                 | 10. Fuel, chemicals and hazardous materials (identified as such under applicable legislation or the relevant Safety Data Sheet) shall be stored in designated areas within the logistics base, equipped with secondary containment and segregation appropriate to the nature, quantity and spill risk of the materials. Suitable spill response materials and equipment shall be readily available at relevant storage, transfer and handling locations, in accordance with applicable site procedures and Project spill-response arrangements.                                                                |
| Air quality              | Protect ambient air quality by minimising atmospheric emissions | 11. Logistics activities, including support vessel operations and the use of onshore vehicles and machinery, shall be planned and managed by the relevant Contractors, in coordination with Energean and the facility operators, to minimise unnecessary engine operation, idling and associated atmospheric emissions, to the extent achievable within operational and scheduling constraints.                                                                                                                                                                                                                |
| Noise and Vibrations     | Minimise underwater and airborne noise and protect marine fauna | <p>12. Material handling and cargo operations at the logistics base shall be undertaken by the relevant Contractors in accordance with the Port of Igoumenitsa operating procedures, using equipment maintained in good working order to minimise unnecessary noise emissions.</p> <p>13. Support vessel operations shall be coordinated by Energean, in collaboration with the relevant Contractors, taking account of the facility operator, vessel and rig operational and safety requirements, to minimise underwater noise and unnecessary engine operation and idling, where reasonably practicable.</p> |

| ENVIRONMENTAL PARAMETERS                                 | OBJECTIVE OF MEASURE                                                              | MITIGATION MEASURES DURING DRILLING PREPARATION & MOBILISATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Seawater                                                 | Protect seawater quality                                                          | <p>14. Offshore-generated hazardous and non-hazardous wastes (identified as such under applicable legislation or the relevant Safety Data Sheet) shall be managed in accordance with the Waste Management Plan and applicable requirements of MARPOL, the Barcelona Convention and its Offshore Protocol, and EU and Greek legislation. Operational discharges shall be managed in accordance with the requirements applicable to each discharge stream, including MARPOL, the BWM Convention, the Barcelona Convention and its Offshore Protocol, and EU and Greek legislation, as relevant. Chemical selection, use and discharge shall be controlled through the Chemical Use Plan.</p> |
| Marine life, Flora, fauna, habitats, and protected areas | Protect marine fauna, and protected species by avoiding or minimising disturbance | <p>15. A Marine Mammal Mitigation Plan (MMMP) shall be prepared prior to the commencement of non-impulsive sound emissions. The MMMP shall set out the mitigation protocol to be implemented by the relevant contractors for the Vertical Seismic Profile (VSP) operation, including visual monitoring by a qualified Marine Mammal Observer (MMO) and, where applicable, Passive Acoustic Monitoring (PAM), to detect marine mammals and manage the risk of injury from impulsive noise prior to and during the VSP.</p>                                                                                                                                                                  |
|                                                          |                                                                                   | <p>16. Project-related vessels shall operate at speeds not exceeding 14 knots, or their maximum operational speed where lower, within areas identified in the Marine Mammal Mitigation Plan as having higher marine mammal presence, without compromising vessel safety or emergency response capability.</p>                                                                                                                                                                                                                                                                                                                                                                              |
|                                                          |                                                                                   | <p>17. Vessels shall maintain a safe distance from any observed marine mammal, avoid approaching it head-on, avoid crossing or waiting ahead of its direction of travel, and, where safe and practicable, steer behind its path.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| ENVIRONMENTAL PARAMETERS  | OBJECTIVE OF MEASURE                                                                                                      | MITIGATION MEASURES DURING DRILLING PREPARATION & MOBILISATION                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                           |                                                                                                                           | 18. In the event of a collision between a Project vessel and a marine mammal or sea turtle, the vessel's Master shall immediately report the incident to Energean in accordance with the Project's incident-reporting procedure. Energean shall, as soon as reasonably practicable and within any applicable regulatory timeframe, formally notify the competent environmental and other relevant authorities, as required by applicable legislation. |
|                           |                                                                                                                           | 19. Established transit routes shall be followed by Project vessels, where practicable, during drilling preparation and mobilisation, in accordance with standard vessel transit procedures, including applicable navigational notifications (e.g., NAVTEX) and coordination with the competent maritime authorities, and subject to the Master's discretion on safety grounds.                                                                       |
|                           |                                                                                                                           | 20. Prior to spudding the well, a remotely operated vehicle (ROV) survey shall be conducted within a 70-metre radius of the planned wellhead location to inspect the seabed for pre-existing features or sensitivities. If any previously unidentified seabed features or sensitivities are observed within the surveyed area, the relevant authorities shall be informed.                                                                            |
| Spatial Planning Land Use | Minimise interference with existing onshore land uses and ensure compliance with applicable spatial planning requirements | 21. Project activities shall be conducted in accordance with the terms of existing operating permits, licenses and land use designations applicable to the Port of Igoumenitsa and Corfu International Airport, and shall not require any change to current spatial planning designations for these areas.                                                                                                                                            |
| Maritime uses             | Minimise impacts on maritime uses                                                                                         | 22. Prior to mobilisation and demobilisation, the Operator shall ensure that the drilling contractor engages with the Hellenic Navy Hydrographic Service regarding the planned drilling and vessel-transit operations, in accordance with standard rig mobilisation procedures. The charting review and the ESSBS confirm that no submarine cables are present within 500 metres of the drilling location.                                            |

| ENVIRONMENTAL PARAMETERS | OBJECTIVE OF MEASURE | MITIGATION MEASURES DURING DRILLING PREPARATION & MOBILISATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          |                      | <p>23. The main operators of cruise ships and LNG carriers identified through the Shipping and Navigation Assessment as regularly passing within or near 500 m of the site shall be provided with advance notice of the Asopus-1 operations. This notice shall supplement applicable official navigational notifications, including NAVTEX messages and Notices to Mariners, enabling the vessel operators to review or amend their passage plans, if required.</p> <p>24. The OIM/Master of the MODU and the Master of each support vessel shall have overriding authority and responsibility to make decisions with respect to safety and pollution prevention, in accordance with the ISM Code. The MODU and Project support vessels will comply with applicable international and national maritime legal requirements, including COLREGs (Ref. ii) and the display of appropriate lights, shapes and signals.</p> <p>25. Project support vessels shall be scheduled and operationally coordinated by the Project logistics team. The owners and/or operators of the Platform Supply Vessels shall be responsible for ensuring that each vessel displays the applicable lights and marks and operates AIS, where required, and complies with applicable international, Flag-State, and coastal-State requirements, including applicable Greek legislation, COLREGs (Ref. ii) and SOLAS (Ref. x).</p> <p>26. Subject to authorisation by the competent Greek authorities, a 500 m safety zone around the MODU will be established and notified for the duration of well operations. Unauthorised vessel access to the safety zone will be restricted in accordance with the applicable authorisation and maritime notices. The PSVs will assist the MODU in monitoring the safety zone and communicating with approaching vessels, as required, whilst on site.</p> |



| ENVIRONMENTAL PARAMETERS | OBJECTIVE OF MEASURE                                                                                        | MITIGATION MEASURES DURING DRILLING PREPARATION & MOBILISATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          |                                                                                                             | <p>27. Information on the establishment and duration of the safety zone, and relevant details of the operation, shall be disseminated through official maritime-safety information channels, including NAVTEX messages, navigational warnings, and, where applicable, Notices to Mariners, issued or coordinated by the Hellenic Navy Hydrographic Service in cooperation with the competent Hellenic Coast Guard authorities.</p>                                                                                                                                                                                                                                          |
| Cultural heritage        | Protect underwater cultural heritage and ensure appropriate management of chance archaeological discoveries | <p>28. All project activities shall be governed principally by Law 4858/2021 (Code of Legislation for the Protection of Antiquities and Cultural Heritage) and informed by the principles of the UNESCO Convention on the Protection of the Underwater Cultural Heritage (2001) to ensure the appropriate management and, where practicable, in situ preservation of submerged archaeological resources.</p>                                                                                                                                                                                                                                                                |
|                          |                                                                                                             | <p>29. Prior to the commencement of drilling activities, the Company shall submit to the Hellenic Ephorate of Underwater Antiquities the results of the detailed seabed survey of the marine area at the proposed Asopus-1 well location for review with respect to the potential presence of underwater cultural heritage. Based on the results of this review, and if deemed necessary by the Ephorate, an on-site underwater archaeological survey using technology (ROV, SSS, Sub bottom profiler) shall be provided in the marine area where the exploration drilling is planned to take place. The cost of conducting this survey must be covered by the Company.</p> |
|                          |                                                                                                             | <p>30. Any additional geophysical, environmental or engineering datasets acquired before drilling that provide materially relevant new seabed information for areas subject to planned Project disturbance shall be reviewed to determine whether they materially change the archaeological baseline or require further archaeological assessment and/or notification to the Competent Authority.</p>                                                                                                                                                                                                                                                                       |

| ENVIRONMENTAL PARAMETERS | OBJECTIVE OF MEASURE                    | MITIGATION MEASURES DURING DRILLING PREPARATION & MOBILISATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          |                                         | <p>31. Prior to the commencement of drilling activities, relevant findings and applicable requirements from the archaeological assessment shall be communicated to personnel responsible for planning, supervising or conducting Project activities involving seabed interaction.</p> <p>32. Project personnel engaged in activities involving seabed interaction or subsea observation shall be informed of the applicable cultural heritage controls and made aware of the procedures to follow in the event of a suspected discovery. In the event of a suspected archaeological discovery within the area of the Asopus -1 well location, the relevant Contractor shall implement the actions assigned under the Chance Find Procedure, including stopping any activity under its control that could disturb the suspected find and promptly reporting it through the defined Project reporting route.</p>                                                                                          |
| Economic Activities      | Minimise impacts on economic activities | <p>33. The Project shall actively identify and engage with capable local and other Greek suppliers and service providers for logistics, port services, and other support activities where they meet the Project's safety, operational, and commercial requirements.</p> <p>34. Regular and timely communication shall be maintained with the Hellenic Coast Guard, relevant fisheries organisations, the Port Authorities of Igoumenitsa and Corfu, Corfu International Airport operator, and other identified key stakeholders throughout mobilisation.</p> <p>35. Where practicable, mobilisation logistics at the Port of Igoumenitsa shall be scheduled in coordination with the Port Authority to minimise disruption to routine port commercial and passenger operations.</p> <p>36. Advance notification of the planned drilling campaign and its indicative timing shall be provided to local fishing associations and tourism/port stakeholders to support their own operational planning.</p> |

| ENVIRONMENTAL PARAMETERS | OBJECTIVE OF MEASURE                                                       | MITIGATION MEASURES DURING DRILLING PREPARATION & MOBILISATION                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------|----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Community H&S            | Protect the community health, safety and welfare of workers and the public | 37. Appropriate Personal Protective Equipment (PPE) shall be provided and used by all personnel, where required by the task and work area, in accordance with site procedures at the onshore logistics base and during marine operations. Each Project contractor and company shall be responsible for ensuring its personnel comply with the Project's PPE requirements.                                                                                                                                               |
|                          |                                                                            | 38. Each Project company and contractor shall maintain appropriate training and competence systems for its personnel and shall ensure that personnel have the skills, qualifications and risk awareness necessary to perform the activities assigned to them. Personnel shall receive project-specific briefings on marine operations, traffic management and emergency response, as applicable. Lifting operations shall be carried out by the appropriate contractor with the required competence and qualifications. |
|                          |                                                                            | 39. Emergency response drills, including fire, medical evacuation, man overboard and oil spill response exercises, shall be conducted at intervals defined in the Project and vessel emergency response procedures, and in accordance with applicable legal and Flag-State requirements.                                                                                                                                                                                                                                |
|                          |                                                                            | 40. The Onshore Traffic Management Plan shall be updated by the relevant Contractors, reviewed by Energean and the Port Authority, and used as the basis for the detailed site-specific plan to be implemented prior to mobilisation. The plan shall control vehicle movements, signage and site access.                                                                                                                                                                                                                |
|                          |                                                                            | 41. Mobilisation of the MODU and support vessels shall be coordinated with the competent maritime authorities, including the Hellenic Navy Hydrographic Service and Hellenic Coast Guard, with advance issuance of Notices to Mariners and NAVTEX broadcasts, as applicable, prior to transit and positioning.                                                                                                                                                                                                          |
|                          |                                                                            | 42. Installation of the temporary helicopter hangar and associated helicopter operations at Corfu International Airport shall comply with applicable civil aviation safety procedures and airport operator requirements and shall be coordinated with the relevant airport authorities.                                                                                                                                                                                                                                 |

| ENVIRONMENTAL PARAMETERS | OBJECTIVE OF MEASURE                                                                      | MITIGATION MEASURES DURING DRILLING PREPARATION & MOBILISATION                                                                                                                                                              |
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| Technical Infrastructure | Avoid disruption to maritime, energy, telecommunications and environmental infrastructure | 43. Project activities at the Port of Igoumenitsa shall be undertaken in accordance with the applicable Environmental Terms (Ref. No. 139663103448/08/01.06.2009, as amended and in effect at the time of this assessment). |

**Table 2-6: Proposed mitigation measures for potential adverse environmental and social impacts during the drilling operations**

| ENVIRONMENTAL PARAMETERS                    | OBJECTIVE OF MEASURE                                                                | MITIGATION MEASURES DURING DRILLING OPERATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Climatic and Bioclimatic Characteristics    | Minimise greenhouse gas emissions and air pollutant emissions                       | <b>MM2-1</b> Each Project Contractor shall maintain all machinery, vessels, and vehicles used in the Project according to manufacturer specifications to reduce exhaust emissions. Maintenance shall be carried out by the relevant contractor/owner in accordance with manufacturer schedules, at licensed onshore facilities where practicable.                                                                                                                                                                                              |
|                                             |                                                                                     | <b>MM2-2</b> The MODU and all support vessels shall comply with the requirements of MARPOL 73/78 Convention, Annex VI "Regulations for the Prevention of Air Pollution from Ships". Annex VI regulates emissions of ozone-depleting compounds, nitrogen oxides (NOX), sulfur oxides (SOx) and volatile organic compounds (VOCs).                                                                                                                                                                                                               |
|                                             |                                                                                     | <b>MM2-3</b> Energean shall coordinate with Contractors, the Port Authority and Corfu International Airport to optimise support vessel and helicopter logistics through careful voyage planning, taking into account rig operational requirements, so as to minimise the number of vessel trips, reduce the duration of activities within the project area, and avoid unnecessary engine operation and idling, to the extent achievable within the operational constraints of each party involved.                                             |
| Morphological and Landscape Characteristics | Minimise impacts on landscape characteristics, visual amenity and seabed morphology | <b>MM2-4</b> Use LED lighting for interior lighting, where practicable, and avoid unnecessary operation of external lighting.                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                             |                                                                                     | <b>MM2-5</b> Onshore Project support activities at the Port of Igoumenitsa and Corfu International Airport shall be undertaken within the areas allocated or agreed for Project use by the relevant facility operator. Project equipment, materials, vehicles and wastes shall be stored, handled and parked only within designated areas, except when being transported in accordance with applicable logistics and waste-management arrangements. Unauthorised disposal or storage outside the designated Project areas shall be prohibited. |
|                                             |                                                                                     | <b>MM2-6</b> The Project shall use the existing surfaced areas of the onshore logistics base, and no additional permanent impermeable surfacing is planned. If additional surfacing is subsequently required for safe Project operations, it shall be limited to the minimum necessary extent within the area allocated for Project use and shall be subject to prior agreement with the Port operator and any applicable approvals. Any reinstatement requirements shall be agreed with the Port operator.                                    |

| ENVIRONMENTAL PARAMETERS                                 | OBJECTIVE OF MEASURE                                                      | MITIGATION MEASURES DURING DRILLING OPERATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------------------------------------------|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                          |                                                                           | <b>MM2-7</b> While conducting well operations at the Asopus-1 location, the MODU shall maintain station using a dynamic positioning system meeting IMO DP Equipment Class 3 requirements or an equivalent Class 3 notation accepted by the relevant Flag State and classification society. No anchoring is planned for routine station-keeping.                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Geological, Tectonic and Soil / Sediment Characteristics | Protect soil /sediment and prevent physical disturbance and contamination | <b>MM2-8</b> Hazardous and non-hazardous waste (identified as such under applicable legislation or the relevant Safety Data Sheet) generated offshore shall be segregated, stored, handled and transferred to authorised shore reception or waste-management facilities in accordance with the Project Waste Management Plan and the applicable requirements of MARPOL, the Barcelona Convention and its Offshore Protocol, and EU and Greek legislation. No solid or hazardous waste shall be intentionally discharged to the marine environment. Operational discharges, including drilling fluids and cuttings, sewage, bilge water, ballast water and food waste, shall be managed in accordance with the relevant discharge-specific measures and applicable legal requirements. |
|                                                          |                                                                           | <b>MM2-9</b> Fuel, chemicals and hazardous materials (identified as such under applicable legislation or the relevant Safety Data Sheet) stored at the onshore logistics base shall be kept in designated areas with secondary containment and segregation appropriate to the nature, quantity and spill risk of the materials. Suitable spill response materials and equipment shall be readily available at relevant storage, transfer and handling locations, in accordance with applicable site procedures and Project spill-response arrangements.                                                                                                                                                                                                                               |
|                                                          |                                                                           | <b>MM2-10</b> Drilling fluids, cuttings and chemicals shall be managed in accordance with the Project Chemical Use Plan, Waste Management Plan, assessed discharge arrangements and applicable regulatory requirements. Water-based muds will be used, with no planned use of oil-based or non-aqueous drilling fluids. Preference is given to PLONOR substances, CHARM Gold products or OCNS Group E products, as applicable, where operationally suitable and available. Other chemicals may be used where required for planned or contingency operations, provided their suitability has been reviewed, and no suitable lower-hazard alternative is reasonably available.                                                                                                          |
|                                                          |                                                                           | <b>MM2-11</b> Cementing discharges shall be managed according to the Chemical Use Plan, assessed discharge arrangements, applicable regulatory requirements and, where relevant, the Waste Management Plan. Preference is given to cementing chemicals comprising PLONOR substances or classified as CHARM Gold or OCNS Group E, as applicable, where operationally suitable and available. Other chemicals may be used where required for planned or contingency cementing operations, provided their suitability has been reviewed, and no suitable lower-hazard alternative is reasonably available.                                                                                                                                                                               |
| Air quality                                              | Protect ambient air quality by minimising atmospheric emissions           | <b>MM2-12</b> Drilling activities shall be planned and managed by the Drilling Contractor to minimise unnecessary engine operation, idling and associated atmospheric emissions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Noise and Vibrations                                     | Minimise underwater and airborne noise and protect marine fauna           | <b>MM2-13</b> Material handling and cargo operations at the logistics base shall be undertaken by the relevant Contractors in accordance with applicable Port of Igoumenitsa operating procedures, using equipment maintained in good working order to minimise unnecessary noise emissions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

| ENVIRONMENTAL PARAMETERS | OBJECTIVE OF MEASURE     | MITIGATION MEASURES DURING DRILLING OPERATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Seawater                 | Protect seawater quality | <b>MM2-14</b> Routine inspection and maintenance of the drillship, support vessels, helicopters, generators and relevant noise-generating mechanical equipment shall be undertaken in accordance with applicable maintenance programmes and manufacturers' recommendations, minimising unnecessary noise and vibration emissions.                                                                                                                                                                                                                                                                                                             |
|                          |                          | <b>MM2-15</b> Support vessel operations shall be coordinated by Energean, in collaboration with the relevant Contractors, taking account of the facility operator, vessel and rig operational and safety requirements, to minimise underwater noise and unnecessary engine operation and idling, where reasonably practicable.                                                                                                                                                                                                                                                                                                                |
|                          |                          | <b>MM2-16</b> All Vertical Seismic Profiling (VSP) operations shall commence with a soft start (ramp-up), gradually increasing acoustic energy from low to full operational power over 20–30 minutes, in accordance with the Marine Mammal Mitigation Plan. The duration of VSP operations shall be limited to that reasonably necessary to achieve the survey objectives.                                                                                                                                                                                                                                                                    |
|                          |                          | <b>MM2-17</b> Offshore-generated hazardous and non-hazardous wastes shall be managed in accordance with the Waste Management Plan and applicable requirements of MARPOL, the Barcelona Convention and its Offshore Protocol, and EU and Greek legislation. Operational discharges shall be managed in accordance with the requirements applicable to each discharge stream, including MARPOL, the BWM Convention, the Barcelona Convention and its Offshore Protocol, and EU and Greek legislation, as relevant. Chemical selection, use and discharge shall be controlled through the Chemical Use Plan.                                     |
|                          |                          | <b>MM2-18</b> A Chemical Use Plan shall be implemented, which shall include: (i) the chemicals proposed for planned and contingency operations and relevant environmental hazard and ecotoxicity information; (ii) the purpose or purposes for which the chemicals are intended to be used; (iii) the estimated concentrations and quantities of the chemicals intended to be used; (iv) the potential routes and locations through which chemicals may be discharged to the marine environment, as applicable. Chemical selection shall take account of operational requirements and the availability of suitable lower-hazard alternatives. |
|                          |                          | <b>MM2-19</b> Only chemicals required for drilling, cementing and associated well operations, together with chemicals required for routine vessel and equipment operations, will be used offshore. No well-completion, stimulation or production-related chemicals are planned.                                                                                                                                                                                                                                                                                                                                                               |
|                          |                          | <b>MM2-20</b> Chemical selection will follow the principles of avoid, substitute, minimise and control to reduce potential risks to seawater quality. Preference will be given to PLONOR substances and CHARM Gold or OCNS Group E products, as applicable, where operationally suitable and reasonably available. Other chemicals may be selected where required for planned or contingency operations following review of their suitability and available lower-hazard alternatives.                                                                                                                                                        |
|                          |                          | <b>MM2-21</b> The use and discharge of substances covered by Annex I of the Offshore Protocol shall be prohibited, except where permitted under the applicable regulatory framework. Chemicals with higher-hazard classifications will be used only where required for a specific technical function and where no suitable lower-hazard alternative is reasonably available.                                                                                                                                                                                                                                                                  |



| ENVIRONMENTAL PARAMETERS | OBJECTIVE OF MEASURE | MITIGATION MEASURES DURING DRILLING OPERATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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|                          |                      | <b>MM2-22</b> Pipe dope and casing dope will be treated as non-discharged chemicals, with application controlled to minimise excess material and prevent planned discharge to sea.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                          |                      | <b>MM2-23</b> Chemical transfer, storage and handling offshore will be controlled through containment, spill prevention, bunding, or closed drainage where applicable, trained personnel and inventory management, taking account of the nature, quantity and spill risk of the chemicals.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                          |                      | <b>MM2-24</b> Drilling cuttings and water-based drilling fluids discharged at the seabed during the riserless sections shall be managed in accordance with applicable regulatory requirements, including the Barcelona Convention Offshore Protocol and the relevant UNEP/MAP Common Standards and Guidelines for the use and disposal of drilling fluids and cuttings in the Mediterranean.                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                          |                      | <b>MM2-25</b> Drilling cuttings and associated drilling fluids generated after installing the riser shall be managed in accordance with applicable regulatory requirements, including the Barcelona Convention Offshore Protocol and the relevant UNEP/MAP Common Standards and Guidelines for the use and disposal of drilling fluids and cuttings in the Mediterranean. Drilling returns shall be monitored through LWD, mudlogging and routine observation. Where cuttings or drilling returns are identified as mixed with reservoir hydrocarbons in concentrations that make them unsuitable for discharge under applicable requirements, discharge of the affected material shall cease. The affected cuttings and fluids shall be contained onboard and transferred ashore for management at an authorised facility. |
|                          |                      | <b>MM2-26</b> Sanitary wastewater (blackwater and greywater) shall be managed and discharged in accordance with the requirements of MARPOL Annex IV and applicable Greek legislation. Blackwater shall be treated in an approved sewage treatment system prior to discharge. Where applicable discharge requirements cannot be achieved, sewage shall be retained in holding tanks and either discharged once the requirements can be met or transferred to authorised shore reception facilities.                                                                                                                                                                                                                                                                                                                          |
|                          |                      | <b>MM2-27</b> Bilge water collected from machinery spaces shall be routed to dedicated bilge holding tanks and processed through an approved oily water separator (OWS) equipped with a certified oil content monitor and automatic stopping device. Treated bilge water may only be discharged when the oil content of the undiluted effluent does not exceed 15 mg/L (15 ppm) and all other applicable MARPOL Annex I discharge conditions are met.                                                                                                                                                                                                                                                                                                                                                                       |
|                          |                      | <b>MM2-28</b> Deck drainage from non-hazardous areas shall be discharged through the vessel drainage system. Any tainted runoff shall be contained and managed through the vessel's applicable drainage and treatment arrangements, including the oily water separator (OWS), if applicable. Where oily drainage is treated through an OWS, the oil content of any discharge shall not exceed 15 mg/L (15 ppm). Deck drainage may only be discharged to sea where permitted under applicable MARPOL, Flag State and vessel requirements and where no visible oil sheen would result.                                                                                                                                                                                                                                        |



| ENVIRONMENTAL PARAMETERS                    | OBJECTIVE OF MEASURE                                                              | MITIGATION MEASURES DURING DRILLING OPERATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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|                                             |                                                                                   | <b>MM2-29</b> Cooling water shall be discharged through multiple outlets. The temperature difference between cooling-water intake and discharge shall not exceed 5 °C. Cooling-water discharges shall be managed in accordance with the MODU's approved systems and procedures and applicable environmental requirements. The discharge shall comprise non-contact seawater and shall not contain oil or harmful substances.                                                                                                                                                                                                                                                                                                                                               |
|                                             |                                                                                   | <b>MM2-30</b> Ballast water on the MODU and support/supply vessels shall be managed in accordance with the Ballast Water Management Convention, including the applicable provisions of Regulations B-1 and D-1/D-2, as applicable, the approved Ballast Water Management Plan, and the Ballast Water Record Book. Any ballast water management system installed on board shall be type-approved in accordance with Regulation D-3.                                                                                                                                                                                                                                                                                                                                         |
|                                             |                                                                                   | <b>MM2-31</b> Any unused, excess, or waste pipe dope, tainted rags or absorbents, and empty containers shall be collected, segregated and managed in accordance with the Project Waste Management Plan and applicable MARPOL requirements, and transferred via the supply base to authorised onshore waste-management facilities. Any accidental spills will be managed in accordance with the Project spill response procedures. Use of pipe dope shall be subject to the Chemical Use Plan, and pipe dope shall not be intentionally discharged to seawater.                                                                                                                                                                                                             |
|                                             |                                                                                   | <b>MM2-32</b> Brine streams may only be discharged where they do not contain oil or harmful substances and in accordance with applicable MARPOL requirements, Greek environmental legislation, permit conditions and vessel procedures.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                             |                                                                                   | <b>MM2-33</b> Food waste shall be comminuted or ground to pass through a screen with openings no greater than 25 mm and may only be discharged in accordance with the location and operational conditions applicable to the MODU and Project vessels under MARPOL Annex V, including the applicable minimum distance from the nearest land. Food waste mixed with other waste shall not be discharged.                                                                                                                                                                                                                                                                                                                                                                     |
| Flora, fauna, habitats, and protected areas | Protect marine fauna, and protected species by avoiding or minimising disturbance | <b>MM2-34</b> Before commencing VSP operations, certified Marine Mammal Observers (MMOs) shall conduct a pre-shooting visual search for marine mammals and sea turtles within the 500 m zone specified in the Marine Mammal Mitigation Plan. Passive Acoustic Monitoring (PAM) shall supplement visual monitoring for vocalising marine mammals during darkness or poor visibility. The duration of the pre-shooting search, ramp-up (soft-start) procedure, and the delay, shutdown and restart criteria shall be implemented in accordance with the Marine Mammal Mitigation Plan and applicable regulatory requirements.                                                                                                                                                |
|                                             |                                                                                   | <b>MM2-35</b> During VSP operations, two Marine Mammal Observers (MMOs), holding ACCOBAMS certification or an equivalent recognised qualification, shall be deployed at suitable observation points onboard the vessel to provide effective visual coverage of the 500 m mitigation zone. One or more suitably qualified PAM operators shall be provided, as required by the Marine Mammal Mitigation Plan, to implement monitoring during darkness or poor visibility. Marine mammal and sea turtle sightings, pre-shooting searches, delays, soft-starts, shutdowns and other mitigation actions shall be recorded using the applicable reporting forms and submitted in accordance with the Marine Mammal Mitigation Plan and applicable permit/reporting requirements. |

| ENVIRONMENTAL PARAMETERS | OBJECTIVE OF MEASURE | MITIGATION MEASURES DURING DRILLING OPERATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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|                          |                      | <b>MM2-36</b> All acoustic source tests shall commence with a soft-start (ramp-up), gradually increasing acoustic energy from low to full operational power over 20–30 minutes, in accordance with the Marine Mammal Mitigation Plan. If a marine mammal or sea turtle is detected within the 500 m zone before full power is reached, acoustic operations shall be suspended and shall not recommence until the applicable clearance, and restart requirements have been met. |
|                          |                      | <b>MM2-37</b> If marine mammals or sea turtles are detected within the 500 m mitigation zone, acoustic operations shall be delayed until the animals have left the area and at least 20 minutes have elapsed since the last visual sighting, or for any longer period specified in the Marine Mammal Mitigation Plan.                                                                                                                                                          |
|                          |                      | <b>MM2-38</b> In the event of a collision between a Project vessel and a marine mammal or sea turtle, the vessel's Master shall immediately report the incident to Energean in accordance with the Project's incident-reporting procedure. Energean shall, as soon as reasonably practicable and within any applicable regulatory timeframe, formally notify the competent environmental and other relevant authorities, as required by applicable legislation.                |
|                          |                      | <b>MM2-39</b> Project-related vessels shall operate at speeds not exceeding 14 knots, or their maximum operational speed where lower, within areas identified in the Marine Mammal Mitigation Plan as having higher marine mammal presence, without compromising vessel safety or emergency response capability.                                                                                                                                                               |
|                          |                      | <b>MM2-40</b> Vessels shall maintain a safe distance from any observed marine mammal, avoid approaching it head-on, avoid crossing or waiting ahead of its direction of travel, and, where safe and practicable, steer behind its path.                                                                                                                                                                                                                                        |
|                          |                      | <b>MM2-41</b> No planned discharge from the MODU or Project vessels shall be made if at any point a vessel is within the Ionian Archipelago IMMA or the Nisoi Paxoi Kai Antipaxoi Kai Evryteri Thalassia Periochi (GR2230003) Natura 2000 site.                                                                                                                                                                                                                                |
|                          |                      | <b>MM2-42</b> Appropriate screens or equivalent protective measures shall be fitted to the drillship seawater intakes to minimise the risk of entrainment of marine flora and fauna.                                                                                                                                                                                                                                                                                           |
|                          |                      | <b>MM2-43</b> Light emissions shall be minimised during night-time hours, as far as practicable while maintaining safe operations and navigational requirements. Directional lighting shall be used, where practicable, to minimise light spill onto the sea.                                                                                                                                                                                                                  |
|                          |                      | <b>MM2-44</b> External lighting shall comply with applicable maritime, aviation, Flag State and operational safety requirements. Where practicable without affecting those requirements, non-essential lighting shall be positioned, directed or shielded to minimise unnecessary upward and outward light spill, particularly during bird-migration periods.                                                                                                                  |
|                          |                      | <b>MM2-45</b> Where fitted, blinds or other available screening shall be used on accommodation windows during hours of darkness, where practicable, to minimise unnecessary outward light spill, particularly during bird-migration periods.                                                                                                                                                                                                                                   |

| ENVIRONMENTAL PARAMETERS | OBJECTIVE OF MEASURE              | MITIGATION MEASURES DURING DRILLING OPERATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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|                          |                                   | <b>MM2-46</b> Helicopter flights shall be planned and conducted by the helicopter operator in accordance with applicable aviation requirements, air-traffic-control instructions and Corfu International Airport operator procedures. Where safe and operationally practicable, flight routes and altitudes shall be selected to avoid unnecessary overflight of known bird breeding, roosting or concentration areas identified as relevant to the Project.                                                                                                                                           |
| Maritime uses            | Minimise impacts on maritime uses | <b>MM2-47</b> The OIM/Master of the MODU and the Master of each support vessel shall have overriding authority and responsibility to make decisions with respect to safety and pollution prevention, in accordance with the ISM Code. The MODU and Project support vessels will comply with applicable international and national maritime legal requirements, including COLREGs (Ref. ii) and the display of appropriate lights, shapes and signals.                                                                                                                                                  |
|                          |                                   | <b>MM2-48</b> The main operators of cruise ships and LNG carriers identified through the Shipping and Navigation Assessment as regularly passing within or near 500 m of the site shall be provided with advance notice of the Asopus-1 operations. This notice shall supplement applicable official navigational notifications, including NAVTEX messages and Notices to Mariners, enabling the vessel operators to review or amend their passage plans, if required.                                                                                                                                 |
|                          |                                   | <b>MM2-49</b> The MODU will have a vessel-specific collision risk management plan, informed by the site-specific Shipping and Navigation Assessment, to reduce the risk of collision from third-party vessels while it is restricted in its ability to manoeuvre (RAM) and engaged in well operations. The plan shall include measures to provide adequate warning time, continuous monitoring of marine traffic by competent watchkeepers using AIS, ARPA and other available navigational aids, and appropriate communications, lights, shapes and signals reflecting the MODU's operational status. |
|                          |                                   | <b>MM2-50</b> Project support vessels shall be scheduled and operationally coordinated by the Project logistics team. The owners and/or operators of the Platform Supply Vessels shall be responsible for ensuring that each vessel displays the applicable lights and marks and operates AIS, where required, and complies with applicable international, Flag-State, and coastal-State requirements, including applicable Greek legislation, COLREGs (Ref. ii) and SOLAS (Ref. x).                                                                                                                   |
|                          |                                   | <b>MM2-51</b> Subject to authorisation by the competent Greek authorities, a 500 m safety zone around the MODU will be established and notified for the duration of well operations. Unauthorised vessel access to the safety zone will be restricted in accordance with the applicable authorisation and maritime notices. The PSVs will assist the MODU in monitoring the safety zone and communicating with approaching vessels, as required, whilst on site.                                                                                                                                       |
|                          |                                   | <b>MM2-52</b> Information on the establishment and duration of the safety zone, and relevant details of the operation, shall be disseminated through official maritime-safety information channels, including NAVTEX messages, navigational warnings, and, where applicable, Notices to Mariners, issued or coordinated by the Hellenic Navy Hydrographic Service in cooperation with the competent Hellenic Coast Guard authorities.                                                                                                                                                                  |

| ENVIRONMENTAL PARAMETERS | OBJECTIVE OF MEASURE                                                                                        | MITIGATION MEASURES DURING DRILLING OPERATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          |                                                                                                             | <p><b>MM2-53</b> The drillship will have an Emergency Response Plan detailing procedures to be followed in an emergency. The MODU shall also maintain Well-Specific Operating Guidelines (WSOG), informed by the applicable station-keeping, riser and emergency-disconnect analyses, defining the operating limits, alert status and actions for loss or degradation of position. Where required by the WSOG and associated MODU procedures, the Emergency Disconnect Sequence (EDS) shall be initiated to secure the well and enable the MODU to disengage safely.</p> <p><b>MM2-54</b> The Operator will maintain appropriate liaison with relevant fishing associations during drilling operations to communicate material changes or issues that may affect fishing activities and, where reasonably practicable, minimise interference with fishing vessels.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Cultural heritage        | Protect underwater cultural heritage and ensure appropriate management of chance archaeological discoveries | <p><b>MM2-55</b> During drilling operations, personnel engaged in seabed interaction or subsea observation shall remain aware of the applicable cultural heritage controls. If suspected archaeological material is identified, any activity under their control that could disturb the suspected find shall be stopped, and the discovery shall be promptly reported and managed in accordance with the Project Chance Find Procedure.</p> <p><b>MM2-56</b> No archaeological remains were identified within the immediate project footprint. However, should material of possible archaeological significance be encountered during project activities, the following Chance Find Procedure shall be implemented: • The affected activity shall be stopped to the extent necessary to avoid disturbance. • Record the location and nature of the find and apply practicable controls to avoid further disturbance. • Obtain photographic and/or video documentation of the discovery where practicable. • Inform the OIM/Master and the designated Project representative through the defined Project reporting route. • Obtain advice from an appropriately qualified maritime archaeologist where required to support notification, preliminary interpretation or the response requested by the competent authority. • The designated Project representative shall notify the Ephorate of Underwater Antiquities within the timeframe required by applicable law, permit conditions or agreed notification arrangements, providing the available relevant information. • The suspended seabed-disturbing activity shall not recommence within the affected area until authorised by the Project Operator, taking into account the OIM/Master's independent authority and any direction received from the competent authority.</p> <p><b>MM2-57</b> The Cultural Heritage Management Plan should be reviewed and updated where necessary if: • New archaeological discoveries are made; • Additional geophysical or seabed investigations provide new, material information relevant to the cultural heritage assessment or the planned disturbance footprint; • Project activities are modified in a manner that may affect cultural heritage resources; • New information becomes available regarding the archaeological potential of the project area.</p> |
| Economic Activities      | Minimise impacts on economic activities                                                                     | <p><b>MM2-58</b> The Project shall actively identify and engage with capable local and other Greek suppliers and service providers for logistics, port services, and other support activities where they meet the Project's safety, operational, and commercial requirements.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

| ENVIRONMENTAL PARAMETERS | OBJECTIVE OF MEASURE                                                       | MITIGATION MEASURES DURING DRILLING OPERATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          |                                                                            | <b>MM2-59</b> Regular and timely communication shall be maintained with the Hellenic Coast Guard, relevant fisheries organisations, the Port Authorities of Igoumenitsa and Corfu, Corfu International Airport operator, and other identified key stakeholders throughout operations.                                                                                                                                                                                                                                             |
|                          |                                                                            | <b>MM2-60</b> Commencement of drilling activities shall be scheduled outside the peak tourism season, taking account of regulatory approvals, rig and vessel availability, weather, safety and operational requirements.                                                                                                                                                                                                                                                                                                          |
|                          |                                                                            | <b>MM2-61</b> Relevant local stakeholders shall be provided with an appropriate contact route in the Energean website for raising Project-related concerns during drilling operations. Concerns received shall be recorded and addressed in accordance with applicable Project procedures.                                                                                                                                                                                                                                        |
|                          |                                                                            | <b>MM2-62</b> Where practicable, mobilisation logistics at the Port of Igoumenitsa shall be scheduled in coordination with the Port Authority to minimise disruption to routine port commercial and passenger operations.                                                                                                                                                                                                                                                                                                         |
| Community H&S            | Protect the community health, safety and welfare of workers and the public | <b>MM2-63</b> Appropriate Personal Protective Equipment (PPE) shall be provided and used by all personnel, where required by the task and work area, in accordance with site procedures at the onshore logistics base and during marine operations. Each Project contractor and company shall be responsible for ensuring its personnel comply with the Project's PPE requirements.                                                                                                                                               |
|                          |                                                                            | <b>MM2-64</b> Each Project company and contractor shall maintain appropriate training and competence systems for its personnel and shall ensure that personnel have the skills, qualifications and risk awareness necessary to perform the activities assigned to them. Personnel shall receive project-specific briefings on marine operations, traffic management and emergency response, as applicable. Lifting operations shall be carried out by the appropriate contractor with the required competence and qualifications. |
|                          |                                                                            | <b>MM2-65</b> Emergency response drills, including fire, medical evacuation, man overboard and oil spill response exercises, shall be conducted at intervals defined in the Project and vessel emergency response procedures, and in accordance with applicable legal and Flag-State requirements.                                                                                                                                                                                                                                |
|                          |                                                                            | <b>MM2-66</b> Subject to authorisation by the competent Greek authorities, the 500 m safety zone around the MODU shall be maintained during well operations and notified through applicable official maritime-safety information channels. The MODU shall maintain continuous watchkeeping using AIS, ARPA, VHF and other available navigational aids, consistent with the Shipping and Navigation Assessment.                                                                                                                    |
|                          |                                                                            | <b>MM2-67</b> Sealed radioactive sources may be used only where required for formation-evaluation tools within specific well-logging or logging-while-drilling tools. Their use, storage and transport shall be managed by the relevant licensed contractor in accordance with applicable EEAE authorisations, Greek radiation-protection requirements and the contractor's approved radiation-safety procedures.                                                                                                                 |
|                          |                                                                            | <b>MM2-68</b> Chemical handling shall follow the Chemical Use Plan and applicable contractor procedures, including review of relevant Safety Data Sheets, appropriate containment and segregation, and spill-prevention and response arrangements at the shore base and offshore.                                                                                                                                                                                                                                                 |



| ENVIRONMENTAL PARAMETERS                | OBJECTIVE OF MEASURE                                                                      | MITIGATION MEASURES DURING DRILLING OPERATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------------|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                         |                                                                                           | <b>MM2-69</b> Helicopter transfers between Corfu International Airport and the MODU shall be conducted by the helicopter operator in accordance with applicable aviation requirements and the requirements and procedures of the Corfu International Airport operator, taking account of operational, air traffic and weather conditions, to minimise risks to third parties.                                                                                                                                                          |
| Technical Infrastructure                | Avoid disruption to maritime, energy, telecommunications and environmental infrastructure | <b>MM2-70</b> Project activities at the Port of Igoumenitsa shall be undertaken in accordance with the applicable Environmental Terms (Ref. No. 139663103448/08/01.06.2009, as amended and in effect at the time of this assessment).                                                                                                                                                                                                                                                                                                  |
| Environmental Management and Monitoring | Ensure environmental compliance and verification of mitigation measures                   | <b>MM2-71</b> An Environmental Monitoring Programme (EMP) shall be implemented throughout the Project to verify compliance with applicable environmental requirements and monitor the effectiveness of mitigation measures. Monitoring shall include, as appropriate, drilling discharges, seawater quality, waste management, chemical use, environmental incidents and marine fauna observations. Monitoring results shall be reviewed in accordance with the EMP, and proportionate corrective actions implemented where necessary. |

**Table 2-7: Mitigation measures for potential adverse environmental and social impacts during the decommissioning and site restoration phase of the project**

| ENVIRONMENTAL PARAMETERS                    | OBJECTIVE OF MEASURE                                                                       | MITIGATION MEASURES DURING DECOMMISSIONING & SITE RESTORATION                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------------------------|--------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Climatic and Bioclimatic Characteristics    | Minimise greenhouse gas emissions and atmospheric pollutants                               | <b>MM3-1</b> Each Project Contractor shall maintain all machinery, vessels, and vehicles used in the Project according to manufacturer specifications to reduce exhaust emissions. Maintenance shall be carried out by the relevant contractor/owner in accordance with manufacturer schedules, at licensed onshore facilities where practicable.                                                                                                                                                           |
|                                             |                                                                                            | <b>MM3-2</b> The MODU and all support vessels shall comply with the requirements of MARPOL 73/78 Convention, Annex VI "Regulations for the Prevention of Air Pollution from Ships". Annex VI regulates emissions of ozone-depleting compounds, nitrogen oxides (NOX), sulfur oxides (SOx) and volatile organic compounds (VOCs).                                                                                                                                                                            |
|                                             |                                                                                            | <b>MM3-3</b> Energean shall coordinate with relevant Contractors, the Port Authority and Corfu International Airport to optimise support vessel and helicopter logistics through careful voyage planning, taking into account rig operational requirements, so as to minimise the number of vessel trips, reduce the duration of activities within the project area, and avoid unnecessary engine operation and idling, to the extent achievable within the operational constraints of each party involved. |
| Morphological and Landscape Characteristics | Restore the project area and prevent permanent alteration of seabed and onshore facilities | <b>MM3-4</b> Upon completion of drilling and Plug and Abandonment (P&A), temporary subsea equipment deployed by the Project shall be recovered. An ROV seabed survey shall be undertaken within a 50 m radius of the well location to identify Project-related debris. Temporary Project equipment and materials shall be removed from the onshore support facilities or otherwise managed in accordance with arrangements agreed with the relevant facility operator.                                      |
|                                             |                                                                                            | <b>MM3-5</b> Any temporary areas used for Project activities at the onshore logistics base shall be left in the condition agreed with the relevant facility operator following completion of Project use.                                                                                                                                                                                                                                                                                                   |

| ENVIRONMENTAL PARAMETERS                                 | OBJECTIVE OF MEASURE                                                   | MITIGATION MEASURES DURING DECOMMISSIONING & SITE RESTORATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------------------------------------------|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Geological, Tectonic and Soil / Sediment Characteristics | Protect soil / sediment and minimise physical and chemical disturbance | <b>MM3-6</b> Hazardous and non-hazardous wastes (identified as such under applicable legislation or the relevant Safety Data Sheet) generated offshore shall be segregated, stored, handled and transferred to authorised shore reception or waste-management facilities in accordance with the Project Waste Management Plan and the applicable requirements of MARPOL, the Barcelona Convention and its Offshore Protocol, and EU and Greek legislation. No solid or hazardous waste shall be intentionally discharged to the marine environment. Operational discharges, including drilling fluids and cuttings, sewage, bilge water, ballast water and food waste, shall be managed in accordance with the relevant discharge-specific measures and applicable legal requirements. |
|                                                          |                                                                        | <b>MM3-7</b> The exploration well shall be plugged and abandoned in accordance with the accepted HEREMA Notification of Well Operations (NoWO), applicable regulatory requirements, the approved P&A programme, and Good International Industry Practice (GIIP).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                                          |                                                                        | <b>MM3-8</b> Permanent cement barriers shall be installed and verified using methods appropriate to the barrier type and well conditions, in accordance with the accepted NoWO, approved well programme, applicable regulatory requirements and Good International Industry Practice.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                                          |                                                                        | <b>MM3-9</b> Upon completion of the well operations, the required records and documentation shall be submitted to the competent authorities in accordance with applicable regulatory requirements.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Air quality                                              | Protect air quality by minimising atmospheric emissions                | <b>MM3-10</b> Logistics activities, including support vessel operations and the use of onshore vehicles and machinery, shall be planned and managed by the relevant Contractors, in coordination with Energean and the facility operators, to minimise unnecessary engine operation, idling and associated atmospheric emissions, to the extent achievable within operational and scheduling constraints.                                                                                                                                                                                                                                                                                                                                                                              |
| Noise and Vibrations                                     | Minimise underwater and airborne noise                                 | <b>MM3-11</b> Support vessel operations shall be coordinated by Energean, in collaboration with the relevant Contractors, taking account of the facility operator, vessel and rig operational and safety requirements, to minimise underwater noise and unnecessary engine operation and idling, where reasonably practicable.                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Seawater                                                 | Protect seawater quality                                               | <b>MM3-12</b> Offshore-generated hazardous and non-hazardous wastes shall be managed in accordance with the Waste Management Plan and applicable requirements of MARPOL, the Barcelona Convention and its Offshore Protocol, and EU and Greek legislation. Operational discharges shall be managed in accordance with the requirements applicable to each discharge stream, including MARPOL, the BWM Convention, the Barcelona Convention and its Offshore Protocol, and EU and Greek legislation, as relevant. Chemical selection, use and discharge shall be controlled through the Chemical Use Plan.                                                                                                                                                                              |
| Flora, fauna, habitats, and protected areas              | Protect marine fauna and verify restoration of the seabed              | <b>MM3-13</b> Project-related vessels shall operate at speeds not exceeding 14 knots, or their maximum operational speed where lower, within areas identified in the Marine Mammal Mitigation Plan as having higher marine mammal presence, without compromising vessel safety or emergency response capability.                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                                          |                                                                        | <b>MM3-14</b> Vessels shall maintain a safe distance from any observed marine mammal, avoid approaching it head-on, avoid crossing or waiting ahead of its direction of travel, and, where safe and practicable, steer behind its path.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Maritime uses                                            | Minimise impacts on maritime uses                                      | <b>MM3-15</b> The Operator will maintain appropriate liaison with relevant fishing associations during well decommissioning to communicate material changes or issues that may affect fishing activities and, where reasonably practicable, minimise interference with fishing vessels.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                                          |                                                                        | <b>MM3-16</b> The main operators of cruise ships and LNG carriers identified through the Shipping and Navigation Assessment as regularly passing within or near 500 m of the site shall be provided with advance notice of the Asopus-1 operations. This notice shall supplement applicable official navigational notifications, including NAVTEX messages and Notices to Mariners, enabling the vessel operators to review or amend their passage plans, if required.                                                                                                                                                                                                                                                                                                                 |
|                                                          |                                                                        | <b>MM3-17</b> The OIM/Master of the MODU and the Master of each support vessel shall have overriding authority and responsibility to make decisions with respect to safety and pollution prevention, in accordance with the ISM Code. The MODU and Project support vessels will comply with applicable international and national maritime legal requirements, including COLREGs (Ref. ii) and the display of appropriate lights, shapes and signals.                                                                                                                                                                                                                                                                                                                                  |



| ENVIRONMENTAL PARAMETERS | OBJECTIVE OF MEASURE                                                                                        | MITIGATION MEASURES DURING DECOMMISSIONING & SITE RESTORATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------|-------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          |                                                                                                             | <p><b>MM3-18</b> Project support vessels shall be scheduled and operationally coordinated by the Project logistics team. The owners and/or operators of the Platform Supply Vessels shall be responsible for ensuring that each vessel displays the applicable lights and marks and operates AIS, where required, and complies with applicable international, Flag-State, and coastal-State requirements, including applicable Greek legislation, COLREGs (Ref. ii) and SOLAS (Ref. x).</p> <p><b>MM3-19</b> Subject to authorisation by the competent Greek authorities, a 500 m safety zone around the MODU will be established and notified for the duration of well operations. Unauthorised vessel access to the safety zone will be restricted in accordance with the applicable authorisation and maritime notices. The PSVs will assist the MODU in monitoring the safety zone and communicating with approaching vessels, as required, whilst on site.</p> <p><b>MM3-20</b> Information on the establishment and duration of the safety zone, and relevant details of the operation, shall be disseminated through official maritime-safety information channels, including NAVTEX messages, navigational warnings, and, where applicable, Notices to Mariners, issued or coordinated by the Hellenic Navy Hydrographic Service in cooperation with the competent Hellenic Coast Guard authorities.</p>                                                                                                                |
| Cultural Heritage        | Protect underwater cultural heritage and ensure appropriate management of chance archaeological discoveries | <p><b>MM3-21</b> No archaeological remains were identified within the immediate project footprint. However, should material of possible archaeological significance be encountered during project activities, the Chance Find Procedure shall be implemented.</p> <p><b>MM3-22</b> Any discoveries of potential archaeological significance shall be documented in accordance with the Chance Find Procedure and reported to the competent cultural heritage authorities. Consultation with the Ephorate of Underwater Antiquities shall be undertaken as required regarding any further assessment or protective measures.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Economic Activities      | Minimise impacts on economic activities                                                                     | <p><b>MM3-23</b> The Project shall actively identify and engage with capable local and other Greek suppliers and service providers for logistics, port services, and other support activities where they meet the Project's safety, operational, and commercial requirements.</p> <p><b>MM3-24</b> Regular and timely communication shall be maintained, as required, with the Hellenic Coast Guard, relevant fisheries organisations, the Port Authorities of Igoumenitsa and Corfu, the Corfu International Airport operator and other identified key stakeholders throughout demobilisation, including notification of rig departure and cessation of the Project activities for which the safety zone was established.</p> <p><b>MM3-25</b> Temporary Project facilities and equipment at the Port of Igoumenitsa and Corfu International Airport shall, following completion of Project use, be removed, retained or otherwise managed in accordance with arrangements agreed with the relevant facility operator.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Community H&S            | Protect the community health, safety and welfare of workers and the public                                  | <p><b>MM3-26</b> Appropriate Personal Protective Equipment (PPE) shall be provided and used by all personnel, where required by the task and work area, in accordance with site procedures at the onshore logistics base and during marine operations. Each Project contractor and company shall be responsible for ensuring its personnel comply with the Project's PPE requirements.</p> <p><b>MM3-27</b> Each Project company and contractor shall maintain appropriate training and competence systems for its personnel and shall ensure that personnel have the skills, qualifications and risk awareness necessary to perform the activities assigned to them. Personnel shall receive project-specific briefings on marine operations, traffic management and emergency response, as applicable. Lifting operations shall be carried out by the appropriate contractor with the required competence and qualifications.</p> <p><b>MM3-28</b> Emergency response drills, including fire, medical evacuation, man overboard and oil spill response exercises, shall be conducted at intervals defined in the Project and vessel emergency response procedures, and in accordance with applicable legal and Flag-State requirements.</p> <p><b>MM3-29</b> Waste contractor collections and any removal or dismantling of temporary Project facilities and equipment shall be scheduled and coordinated with the relevant port and airport facility operators to minimise disruption and risks to other facility users.</p> |

| ENVIRONMENTAL PARAMETERS                | OBJECTIVE OF MEASURE                                                                        | MITIGATION MEASURES DURING DECOMMISSIONING & SITE RESTORATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Technical Infrastructure                | Avoid disruption to existing infrastructure and navigation routes during project activities | <b>MM3-30</b> Decommissioning and demobilisation activities shall be planned and coordinated with the relevant port and airport facility operators. Activity timing and arrangements shall, where reasonably practicable, be adjusted to minimise disruption to other facility users, without compromising safety, emergency-response, asset integrity or operational requirements.                                                                                                                                                     |
| Environmental Management and Monitoring | Ensure environmental compliance and verification of mitigation measures                     | <b>MM3-31</b> An Environmental Monitoring Programme (EMP) shall be implemented throughout the Project to verify compliance with applicable environmental requirements and the effectiveness of mitigation measures. Monitoring shall include, as appropriate, drilling discharges, seawater quality, waste management, chemical use, environmental incidents and marine fauna observations. Monitoring results shall be reviewed in accordance with the EMP, and proportionate corrective actions shall be implemented where necessary. |

**Table 2-8: Contingency activities and measures**

| HAZARDS                                                | CONTINGENCY MEASURES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inability to continue the original wellbore            | Re-spudding may be necessary if issues arise that make it impractical to continue drilling the current well. Additional cuttings and drilling-fluid discharges may be generated, and additional cement may be required, depending on the stage at which the re-spud is undertaken.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Inability to continue the existing wellbore trajectory | A sidetrack may be required where technical, geological or wellbore conditions make it impractical to continue along the existing wellbore trajectory. The relevant section of the original wellbore shall be isolated, where required, using an appropriate barrier or mechanical system in accordance with the approved well programme and applicable well-integrity requirements. Any sidetrack shall be subject to the applicable management-of-change procedures and any regulatory notification, acceptance or environmental-permitting requirements arising from the proposed change. Any re-spud shall be managed within the assessed Project design envelope or through the applicable management-of-change and regulatory processes.                                        |
| Loss or degradation of MODU station-keeping            | Temporary interruption of operations may be required during the drilling campaign due to adverse weather, equipment issues, or other operational circumstances. Where disconnection from the well is required, the well will be secured using the applicable well barriers and disconnect procedures before the MODU moves off location. Operations may resume once conditions allow and the applicable operational and regulatory requirements have been satisfied.                                                                                                                                                                                                                                                                                                                  |
| Emergency disconnection from the well                  | A contingent Emergency Disconnect Sequence (EDS) may be initiated in the unlikely event the MODU needs to rapidly disengage from the well (e.g., due to severe weather). The EDS is designed to secure the well through the applicable BOP functions before disconnection of the lower marine riser package. Activation may result in the release of a limited quantity of riser contents, including drilling fluid and entrained cuttings, to the marine environment.                                                                                                                                                                                                                                                                                                                |
| Well influx / kick                                     | Managed in accordance with the project well-control bridging document. Response actions may include shutting in the well, monitoring well pressures, and circulating the influx from the wellbore while maintaining control with the applicable well-control equipment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Well Barrier failure / degradation                     | Well-barrier failure or degradation shall be managed in accordance with the Project Well Control Bridging Document and applicable well-integrity procedures. The well shall be placed in a safe condition, and remedial operations shall be undertaken as required to restore or replace the affected barrier before dependent operations resume.                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Stuck pipe requiring mechanical severance              | Explosives or other cutting tools may be maintained onboard in limited quantities as a contingency measure for mechanical pipe severance (for example in stuck-pipe scenarios). No Tubing-Conveyed Perforating (TCP) or other reservoir-targeting explosive operations are planned for the Asopus-1 campaign. The types and quantities of cutting tools held onboard, and their storage, handling, and use, will be controlled in accordance with applicable legal requirements, vessel procedures, and specialist-vendor arrangements. Tool components and severed tubulars will be recovered where safe and operationally practicable. Any material that cannot be recovered shall be documented and managed in accordance with applicable operational and regulatory requirements. |

Table 2-9: Proposed major accident / hazards prevention measures

| HAZARD                               | MAJOR ACCIDENT / HAZARDS PREVENTION MEASURES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Blowout and Well Releases            | <ul style="list-style-type: none"> <li>Well control shall be managed through primary, secondary and, where required, tertiary well-control measures in accordance with the approved well programme, the Project Well Control Bridging Document and applicable well-control procedures. Primary well control shall be maintained using the drilling-fluid system and, where applicable, other approved pressure-control techniques. Secondary well control shall use the BOP and associated equipment to shut in and control the well following a loss of primary well control. Where primary and secondary measures are insufficient, appropriate tertiary well-control techniques shall be selected and implemented according to the circumstances.</li> <li>A pre-positioned Emergency Shut-In Device (E-SID), installed between the wellhead and the MODU BOP, will provide an additional independent emergency well-isolation capability. The device can shear and seal on any tubular or cable that may be run inside the well. In the unlikely scenario that the BOP stack fails to shut in a well if required, the E-SID will be activated, and the well will be secured.</li> </ul> <p>The selected MODU shall be equipped with well-control, monitoring, detection, shutdown and emergency systems appropriate to the well and operational hazards and compliant with applicable Flag State, classification, regulatory and Project assurance requirements. Rig-specific arrangements shall be verified through MODU selection, well examination, contractor assurance and the Notification of Well Operations.</p> <p>Source-control arrangements proportionate to the assessed well-release scenarios shall be established for the campaign. These shall address, as applicable, BOP intervention, subsea capping, containment (if applicable) and relief-well planning, in accordance with the Project emergency-response arrangements and applicable regulatory requirements.</p>                                                                                                                                                                                                                                                                                                                                                                                                    |
| Fires, Explosions and Toxic Releases | <p>Mud process areas (shale-shaker, mud pits and mud pump rooms) are designated as Zone 1 (a zone in which an explosive atmosphere is likely to occur during normal operation) hazardous areas and shall be protected by mechanically forced negative-pressure ventilation. Flammable gas detectors shall be installed to detect the presence of flammable gas. Low-expansion foam shall be provided for firefighting in the mud process area, and an A60-rated fire wall shall be provided around the boundaries of the shaker room. The shaker-room entrance door shall be located in an unclassified area (cement unit), while CCTV shall be installed in the shale shaker room to facilitate monitoring of the shaker room.</p> <p>The main engine rooms shall be protected by gas, smoke and flame detection, a fire alarm push-button, a fixed CO<sub>2</sub> extinguishing system, portable firefighting equipment and fire hose stations. The bulkheads separating the engine rooms shall be A-60-rated. Fuel-oil cut-off valves shall be available and shall be remotely operated from outside the main engine room. Two detectors shall be provided at each air intake. The engine room ventilation shall shut down automatically when gas is detected in the engine room air intake. Protection against gas ingress through the combustion air shall be provided by rig savers.</p> <p>The vessel shall be equipped with enclosed escape tunnels on the port and starboard sides leading from aft to the accommodation block. HVAC systems comprising supply and exhaust dampers shall be installed at the aft and forward port and starboard positions of the escape tunnels to provide the needed pressurisation to prevent the ingress of smoke and gas into the tunnels. An extra door shall be provided to the escape tunnel to facilitate escape from the drill floor and minimise exposure of people in this area to hazardous events. Watertight doors in the escape tunnels shall be kept open unless a visiting vessel is approaching.</p> <p>The helideck refuelling tank is now located on deck 10 behind a firewall. The area is protected by a deluge system which can be operated remotely. In addition, the Heli guard station has been equipped with CCTV for improved fire monitoring. This use of the helideck refuelling tank is not planned for the campaign.</p> |

| HAZARD                      | MAJOR ACCIDENT / HAZARDS PREVENTION MEASURES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                             | <p>H<sub>2</sub>S detectors shall be in the areas where gas is most likely to be released. Detection of toxic gas (10 ppm) shall give an alarm. High toxic gas (20 ppm) shall initiate the relevant emergency shutdown actions, including automatic control of the ventilation system in the related area. Where drilling into a potentially sour reservoir is anticipated, appropriate additional measures to manage the H<sub>2</sub>S hazard shall be put in place.</p> <p>The storage and use of hazardous or potentially toxic materials kept onboard shall be strictly controlled by MODU procedures. Small toxic gas releases resulting from normal or primary well control operations or from core breakout shall be controlled by standard contingency procedures.</p> <p>The drillship Emergency Response Plan shall define alarm, shutdown, firefighting, muster, evacuation, escape and rescue arrangements for fire, explosion and toxic-release events.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Ship Collision              | <p>Despite the 500-metres restricted area, the MODU shall have a vessel-specific collision risk management plan, informed by the site-specific Shipping and Navigation Assessment. The plan shall include measures to provide adequate warning time, continuous monitoring of marine traffic by competent watchkeepers using AIS, ARPA and other available navigational aids, and appropriate communications, lights, shapes and signals reflecting the MODU's operational status.</p> <p>Radio communications, light signals and sound signals shall be used by the MODU and available support or standby vessels to warn vessels presenting a collision threat.</p> <p>The MODU and Platform Supply Vessels shall comply with COLREGs, SOLAS, applicable Flag State requirements and relevant national requirements, including display of the appropriate navigation lights, marks and day shapes for a vessel Restricted in its Ability to Manoeuvre.</p> <p>Subject to authorisation by the competent Greek authorities, a 500 m safety zone shall be maintained around the MODU during well operations. Project support vessels shall assist in monitoring the zone and communicating with approaching vessels, as required.</p> <p>Where an imminent collision threat cannot be managed through warning or vessel-intervention measures, the applicable emergency response, DP and disconnect procedures shall be implemented in accordance with the WSOG and MODU procedures.</p> |
| Loss of Dynamic Positioning | <p>The MODU's dynamic-positioning system shall meet IMO DP Equipment Class 3 requirements or an equivalent Class 3 notation accepted by the relevant Flag State and classification society. Loss or degradation of station-keeping shall be managed in accordance with the WSOG and applicable MODU procedures, including emergency disconnection and movement off location where required.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Dropped Objects             | <p>Critical areas, including the Temporary Refuge, control rooms, switch rooms and fuel-oil tanks, shall be protected against dropped-object impacts by plated structural decks. Lifting procedures shall prohibit lifting heavy loads directly over live hydrocarbon-containing equipment.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Extreme Weather             | <p>The MODU shall be operated within the designed environmental limits.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Helicopter Accidents        | <p>The helideck shall be designed, certified, operated and maintained in accordance with applicable Flag State, classification, aviation and helicopter-operator requirements.</p> <p>The helideck refuelling tank shall be located behind a firewall and the area is protected by a remotely operated deluge system. Additionally, the Heli guard station is equipped with CCTV for improved fire monitoring to reduce the likelihood of a helideck fire escalating.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

**Table 2-10: Proposed emergency response measures**

| EMERGENCY CATEGORY                    | EMERGENCY RESPONSE MEASURES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Immediate Actions and General Command | <p>The emergency response shall be managed in the following strict priority order: (1) Protect life, (2) Stabilise and regain control, (3) Protect the environment, (4) Protect the asset, and (5) Preserve evidence.</p> <p>The Bronze Leader (on-scene command role defined by the ERP) shall assume on-scene tactical command, stop affected work, isolate energy and ignition sources, establish exclusion zones, and coordinate the initial emergency response. Emergency alarms shall be activated, personnel shall be accounted for at muster stations, and procedures for partial evacuation, full evacuation or abandonment shall be initiated where required.</p> |

| EMERGENCY CATEGORY                     | EMERGENCY RESPONSE MEASURES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Blowout and Well Control               | In the unlikely event of a blowout or other loss of well control, drilling operations shall be suspended, and the well shall be secured using the applicable well-control equipment and procedures. Well pressure, flow and barrier status shall be monitored and appropriate well-control actions implemented in accordance with the Project Well Control Bridging Document. The BOP, E-SID, ESD, EDS and applicable DP response procedures shall be activated where required by the circumstances and relevant operating procedures. Where control cannot be restored using available well-control measures, the applicable source-control arrangements, including subsea capping and relief-well planning, shall be initiated.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Fire and Explosion                     | In the event of a fire or explosion, trained emergency response teams shall deploy the applicable fixed firefighting systems, isolate fuel and ignition sources, undertake boundary cooling, and control smoke to protect escape routes, as appropriate to the circumstances. Ventilation shall be managed, access to affected areas shall be restricted, and breathing apparatus shall be used where necessary to protect emergency responders.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Marine Emergencies and Man Overboard   | Dynamic Positioning drive-off or drift-off events shall be managed in accordance with the Well-Specific Operating Guidelines and applicable MODU procedures, including emergency disconnection where required. Following collision or structural damage, flooding control, stability assessment and pollution containment measures shall be initiated as appropriate to the nature of the event. During man-overboard incidents, rescue equipment shall be deployed immediately, visual contact shall be maintained where practicable, and available support vessels and, where required, the competent search-and-rescue authorities shall be coordinated in accordance with the applicable emergency procedures.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Medical Emergencies and Medevac        | An injured person (IP) shall be assessed and stabilised onboard by the Rig Medic with support from topside medical advisers where required. Medical evacuation shall be undertaken by helicopter or vessel, depending on the IP condition and prevailing operational conditions, to a suitable receiving medical facility. For multiple casualties or complex rescue operations, assistance shall be requested from and coordinated through the Joint Rescue Coordination Centre and the Hellenic Coast Guard, as required.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Toxic Gas (Hydrogen Sulphide) Releases | In the unlikely event of a toxic-gas release, personnel shall be relocated to designated safe areas upwind, crosswind or within protected spaces. Heating, Ventilation and Air Conditioning (HVAC) controls shall be used to limit gas ingress, while escape sets, breathing apparatus and exclusion zones shall be implemented as required to protect personnel. Where required by the nature and scale of the release, external plume-dispersion modelling may be undertaken to assess potential offsite impacts.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Spill and Pollution Response           | <p>The source of the spill shall be controlled where safe and practicable, and the activity associated with the loss of containment shall be suspended or isolated, as appropriate. Initial containment, recovery and protection measures shall be selected and deployed taking account of the substance released, the location and scale of the spill, prevailing conditions and available response capability. The response shall be escalated according to the nature and scale of the incident, with additional personnel, equipment and specialist response resources mobilised where required under the applicable vessel and Project spill-response arrangements.</p> <p>Where the spill exceeds onsite response capability, the competent authorities shall be notified, and additional response resources shall be mobilised in accordance with the applicable spill-response arrangements. The detailed response arrangements, including response organisation, notification, escalation, available resources and coordination with contractors and competent authorities, shall be defined in the applicable emergency and spill-response plans. Any activation of the National Contingency Plan shall be determined by the competent authorities. Chemical dispersants shall only be used following approval by the competent authority. Spill monitoring, waste management and environmental surveillance shall continue as appropriate to the nature and scale of the incident until response and recovery operations are completed.</p> |
|                                        | Response to oil pollution incidents will be undertaken in accordance with the applicable vessel Shipboard Oil Pollution Emergency Plan (SOPEP) and Project Emergency Response Plan which spill-response arrangements are included. Releases involving other chemicals will be managed through the relevant vessel and Project emergency procedures, taking account of the substance involved, its Safety Data Sheet and the nature and scale of the release.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |



| EMERGENCY CATEGORY                                 | EMERGENCY RESPONSE MEASURES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Special Hazards (Security, Cyber and Radiological) | <p>Security and cyber incidents shall be managed in accordance with applicable MODU, contractor and Project procedures, including, as appropriate, access control, isolation of affected Information Technology (IT) and Operational Technology (OT) systems, and implementation of manual operating procedures where safe.</p> <p>For radiological incidents, affected work shall be stopped, the affected area shall be isolated, access shall be controlled, and suitably qualified radiation-protection personnel shall be consulted or mobilised in accordance with the relevant licensed contractor's approved procedures and applicable EEAE requirements.</p> |

**Table 2-11: Proposed Climate Change Adaptation Measures**

| CLIMATE-RELATED HAZARD                                                                | CLIMATE CHANGE ADAPTATION MEASURE                                                                                                                                                                                      |
|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Flooding of Onshore Installations (coastal, fluvial, pluvial or groundwater flooding) | Coordinate Project flood-risk arrangements with the Port of Igoumenitsa and the Corfu International Airport operators, taking into account the applicable facility flood-management and emergency-response procedures. |
|                                                                                       | Locate or protect Project-critical equipment, electrical systems, chemicals and hazardous materials taking account of the flood risk within the areas allocated for Project use.                                       |
|                                                                                       | Use existing drainage and flood-protection arrangements at the onshore support facilities, supplemented by temporary Project controls where reasonably practicable and agreed with the relevant facility operator.     |
|                                                                                       | Monitor applicable weather and flood warnings and implement arrangements for the timely securing, protection or relocation of mobile Project equipment and hazardous materials where required.                         |
|                                                                                       | Review access and logistics arrangements in response to forecast or actual flooding and implement practicable alternative arrangements where required and available.                                                   |
| Changes in wind characteristics                                                       | Apply the operational wind limits established for the MODU, lifting operations, vessel transfers and helicopter operations.                                                                                            |
|                                                                                       | Monitor weather conditions and forecasts using the meteorological information and decision-support arrangements available to the Project, MODU, vessels and aviation contractors.                                      |
|                                                                                       | Plan and conduct marine and aviation operations in accordance with applicable weather-related operating limits and procedures.                                                                                         |
|                                                                                       | Use a MODU and support vessels that comply with applicable Flag State, classification and regulatory requirements for the environmental conditions relevant to the Project.                                            |
|                                                                                       | Secure deck equipment in accordance with the MODU's and vessels' applicable procedures for forecast adverse weather.                                                                                                   |
|                                                                                       | Conduct lifting and crane operations within the applicable equipment limits and approved operating procedures, including relevant wind limits.                                                                         |
|                                                                                       | Postpone, suspend or reschedule offshore transfers, lifting activities and helicopter operations where applicable weather limits are approached or exceeded.                                                           |
|                                                                                       | Maintain contingency arrangements for temporary suspension of operations and placing the well, MODU and associated activities in a safe condition during adverse weather.                                              |

## 2.12 Environmental and social monitoring

**Table 2-12: Environmental and Social Monitoring Plan for the Asopus Exploration drilling Project in Block 2**

(Note: The sampling stations and methodologies defined in this monitoring plan are derived from the Phase 2 Environmental and Social Baseline Study (ESBS) report (Annex 02 of this ESIA) to ensure comparability of operational and post-drilling results with pre-drilling baseline conditions.)

| ITEM NO.   | ENVIRONMENTAL / SOCIAL PARAMETER        | INDICATOR                                 | MEASURABLE PARAMETERS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | SAMPLING / OBSERVATION METHODOLOGY                                                                                                                                                                                                                                                                                    | SAMPLING / OBSERVATION FREQUENCY                                                                                               | LOCATIONS & SPATIAL EXTENT                                                                                                                                                                                                |
|------------|-----------------------------------------|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1</b>   | <b>SEAWATER AND SEDIMENT</b>            |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                       |                                                                                                                                |                                                                                                                                                                                                                           |
| <b>1.1</b> | <b>Seawater</b>                         | Seawater Quality                          | Continuous Vertical Profiling: Temperature, Salinity, Conductivity, pH, Dissolved Oxygen, Fluorescence (Chlorophyll-a), Turbidity.<br>Laboratory Water Chemistry: Total Suspended Solids, Total Organic Carbon, Nutrients (Total Nitrogen, Total Phosphorus, Orthophosphate, Ammoniacal-N, Nitrous-N, Nitric-N), Heavy & Trace Metals (Al, As, Ba, Cd, Cr-tot, Cu, Co, Fe, Pb, Hg, Ni, Sn, V, Zn), Total Petroleum Hydrocarbons (Light fraction C6–C10, Heavy fraction C10–C40) and 16 Priority Polycyclic Aromatic Hydrocarbons. | Continuous Profiling: Multiparameter probe lowered continuously across the full vertical water column (surface to seabed).<br>Water Sampling: Niskin bottle rosette sampler collecting water at 3 discrete depths (surface, middle, bottom). Chemical results evaluated against Directive 2013/39/EU & SQA-MA limits. | Post-drilling campaign / one off                                                                                               | Asopus-1 Station Group: stations D2a (East), D3a (500 m north), D4a (West), D5a (500 m south); near-field station D1a (subject to a safe operational offset from operations); and one Blank station D6a (~1 km distance). |
| <b>1.2</b> | <b>Cuttings</b>                         | Cuttings Monitoring                       | Grain size distribution, sediment classification, total organic carbon, carbonates, nutrients, heavy & trace metals (including Vanadium - V), total petroleum hydrocarbons (light fraction C≤12, heavy fraction C>12) and 16 priority polycyclic aromatic hydrocarbons.                                                                                                                                                                                                                                                           | Riser cuttings collected on board the drilling vessel, homogenized, and transferred to laboratory sample containers. Evaluated against HCMR Sediment Quality Guidelines.                                                                                                                                              | Once per drilling section.                                                                                                     | Mobile offshore drilling unit during drilling operations at Exploration Well Asopus-1.                                                                                                                                    |
| <b>1.3</b> | <b>Sediment</b>                         | Sediment Monitoring                       | Visual seabed inspection, sediment temperature, pH, redox potential, grain size, total organic carbon, carbonates, nutrients, heavy & trace metals (Al, As, Ba, Cd, Cr-tot, Cu, Co, Fe, Pb, Hg, Ni, Sn, V, Zn), total petroleum hydrocarbons (light fraction C≤12, heavy fraction C>12), 16 priority polycyclic aromatic hydrocarbons, and microplastics.                                                                                                                                                                         | Surface sediment sampling via Van Veen grab sampler (2 x 0.1 m²). Laboratory results evaluated against EU legislation / HCMR SQG ERLs.                                                                                                                                                                                | Post-drilling campaign / one off                                                                                               | Asopus-1 Station Group: stations D2a (East), D3a (500 m north), D4a (West), D5a (500 m south); near-field station D1a (subject to a safe operational offset from operations); and one Blank station D6a (~1 km distance). |
| <b>1.4</b> | <b>Ballast Water</b>                    | Ballast Water Management                  | Verification of ballast water treatment, operational logs, and discharge standards compliance.                                                                                                                                                                                                                                                                                                                                                                                                                                    | Review of the approved Ballast Water Management Plan, Ballast Water Record Book and relevant operational records. Any treatment system alarm, deviation or malfunction will be managed in accordance with the approved plan and applicable vessel procedures.                                                         | During applicable ballast-water management or discharge operations and following any system alarm, deviation or malfunction.   | On board the mobile offshore drilling unit.                                                                                                                                                                               |
| <b>2</b>   | <b>BENTHIC FAUNA AND MEGAFAUNA</b>      |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                       |                                                                                                                                |                                                                                                                                                                                                                           |
| <b>2.1</b> | <b>Benthic Communities</b>              | Benthic Macrozoobenthos Ecological Status | ROV visual/photographic seabed inspections.<br>M-AMBI Index or BENTIX, AMBI, Shannon-Wiener Diversity, Pielou Evenness, Species Richness, and Taxa Abundance (individuals per square meter).                                                                                                                                                                                                                                                                                                                                      | ROV visual/photographic seabed inspection to record seafloor morphology, biological features.<br>Van Veen grab sampling (2 x 0.1 m²), onboard sieving through 0.5 mm mesh, preservation, and laboratory taxonomic identification down to the lowest possible level, at least 2 replicates per station.                | Post-drilling campaign / one off                                                                                               | Asopus-1 Station Group: stations D2a (East), D3a (500 m north), D4a (West), D5a (500 m south); near-field station D1a (subject to a safe operational offset from operations); and one Blank station D6a (~1 km distance). |
| <b>2.2</b> | <b>Marine Mammals &amp; Sea Turtles</b> | Marine Megafauna Occurrence & Mitigation  | Species identification, group size, distance, bearing, behavior, life stage, mitigation action logs, exclusion zone enforcement.                                                                                                                                                                                                                                                                                                                                                                                                  | Visual: Dedicated Marine Mammal Observers using reticle binoculars during daylight.<br>Acoustic: Passive Acoustic Monitoring operators using hydrophone array and monitoring software during night/poor visibility.<br>Logging: Standardized JNCC Marine Mammal Recording Forms and ACCOBAMS guidelines.              | Continuous throughout VSP activities and optional for the rest of the drilling campaign. In line with the ACCOBAMS Guidelines. | On board the mobile offshore drilling unit and surrounding 500 m safety mitigation zone around Asopus-1.                                                                                                                  |



| ITEM NO. | ENVIRONMENTAL / SOCIAL PARAMETER         | INDICATOR                                | MEASURABLE PARAMETERS                                                                                                                                                                                                                                                                                                               | SAMPLING / OBSERVATION METHODOLOGY                                                                                                                                                                                                                                                                                                                                                                                                                        | SAMPLING / OBSERVATION FREQUENCY                                                                                                                                                                                                    | LOCATIONS & SPATIAL EXTENT                                                             |
|----------|------------------------------------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 2.3      | Megafauna Collisions                     | Marine Megafauna Incident Reporting      | Collision or suspected collision involving a Project vessel and a marine mammal or sea turtle, including any observed injured or dead animal.                                                                                                                                                                                       | Observations made during routine vessel watchkeeping and Project activities. In the event of a collision or suspected collision involving a Project vessel and a marine mammal or sea turtle, the vessel Master will report the incident immediately to Energean through the applicable incident-reporting arrangements. Energean will notify the competent authorities as soon as reasonably practicable and within any applicable regulatory timeframe. | During routine vessel operations / Per occurrence                                                                                                                                                                                   | On board the mobile offshore drilling unit and project support vessels.                |
| 3        | WEATHER CONDITIONS                       |                                          |                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                     |                                                                                        |
| 3.1      | Weather Conditions                       | Weather Conditions Monitoring            | Review of weather observations and forecasts obtained through the meteorological systems and services used by the MODU and Project vessels, supplemented by visual observations in accordance with applicable operational procedures.                                                                                               | The mobile offshore drilling unit and support vessels will consult real-time weather conditions and forecasts through dedicated marine weather forecast programs and databases accessible to ships, supplemented by visual observations from crew and observers (visibility, sea state, swell, precipitation, sun glare).                                                                                                                                 | In accordance with the applicable MODU, vessel and Project operational procedures, and when relevant to the interpretation of an environmental incident or monitoring observation..                                                 | On board the mobile offshore drilling unit and support vessels.                        |
| 4        | ENVIRONMENTAL PERFORMANCE OF THE PROJECT |                                          |                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                     |                                                                                        |
| 4.1      | Waste                                    | Waste Generation & Management            | Types and quantities of waste transferred ashore, classified using the applicable European List of Waste code (EWC/ELW); waste segregation and storage; waste-transfer documentation; and transfer manifest to appropriately authorized waste contractors or facilities.                                                            | Review of waste-transfer documentation and relevant contractor records, supplemented by inspection of waste segregation and storage arrangements in accordance with the Waste Management Plan..                                                                                                                                                                                                                                                           | Weekly basis.                                                                                                                                                                                                                       | On board drilling unit, support vessels, onshore supply base, and waste staging areas. |
| 4.2      | Resource Use                             | Energy & Raw Material Consumption        | Resource inputs: fuel consumption, fresh water transferred to the MODU and Project vessels, drilling chemical additives, freshwater produced offshore; resource-saving measures, where recorded by the applicable MODU or vessel systems                                                                                            | Fuel consumption logs, Chemical Use Plan inventories and chemical-use records, freshwater transfer records, and available MODU freshwater production records.                                                                                                                                                                                                                                                                                             | Weekly basis.                                                                                                                                                                                                                       | Throughout the project.                                                                |
| 4.3      | Logistics                                | Logistics & Vessel Traffic               | Support vessel and helicopter trip frequency, fuel consumption..                                                                                                                                                                                                                                                                    | Recording and monitoring support vessel and helicopter operational logs.                                                                                                                                                                                                                                                                                                                                                                                  | Weekly basis.                                                                                                                                                                                                                       | Onshore supply base to offshore drilling location.                                     |
| 4.4      | Workspaces                               | Workplace Control                        | Waste segregation and storage; evidence of hydrocarbon or chemical leaks and spills; condition of relevant secondary containment and drainage arrangements; and availability of applicable spill-response equipment.                                                                                                                | On-site visual inspections of deck and relevant areas, chemical and waste storage areas, secondary containment, drainage arrangements and spill-response equipment, as applicable to the location and activities.                                                                                                                                                                                                                                         | Through routine workplace inspections undertaken in accordance with the applicable contractor, MODU and facility procedures. Material findings shall be recorded and managed through the applicable corrective-action arrangements. | On board drilling unit and operational areas.                                          |
| 5        | HUMAN-MADE ENVIRONMENT                   |                                          |                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                     |                                                                                        |
| 5.1      | Socio-Economic                           | Grievance Management                     | A grievance mechanism shall be established and made accessible to local economic stakeholders (incl. tourism / fishing stakeholders); Parameters to be measured will include the number of grievances received; Number/% closed out; average resolution time (days); grievances by category (fisheries, tourism, employment, other) | Review of Project grievance register/log; review of regional administrative publications, studies, and official announcements.                                                                                                                                                                                                                                                                                                                            | Monthly basis.                                                                                                                                                                                                                      | Igoumenitsa Port office / onshore logistics base, and published Project contact.       |
| 5.2      | Socio-Economic                           | Local Employment and Procurement         | Parameters to be measured will include: Number of local/regional personnel employed (direct & contracted) and as % of total workforce; value/% of procurement spend awarded to local/regional suppliers                                                                                                                             | Review of Project HR and procurement/contracting record.                                                                                                                                                                                                                                                                                                                                                                                                  | Monthly basis.                                                                                                                                                                                                                      | Municipal and regional project area.                                                   |
| 6        | HEALTH AND SAFETY                        |                                          |                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                     |                                                                                        |
| 6.1      | H&S Conditions                           | Occupational Health & Safety Performance | Total recordable incidents, lost time incidents, material findings from HSE inspections and audits; and status of related corrective actions.                                                                                                                                                                                       | Review of applicable Project, contractor, MODU, vessel and shore-base HSE records, including incident reports, inspection and audit findings, and corrective-action records.                                                                                                                                                                                                                                                                              | Weekly basis during operations and following a significant incident or material HSE finding.                                                                                                                                        | On board drilling unit, support vessels, and Igoumenitsa shore base.                   |

| ITEM NO. | ENVIRONMENTAL / SOCIAL PARAMETER | INDICATOR                                 | MEASURABLE PARAMETERS                                                                                                                      | SAMPLING / OBSERVATION METHODOLOGY                                                                                                                      | SAMPLING / OBSERVATION FREQUENCY | LOCATIONS & SPATIAL EXTENT                                           |
|----------|----------------------------------|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------------------------|
| 6.2      | H&S Training & Concerns          | Safety Training & Workforce Communication | Safety induction completion rate; toolbox talk attendance records; number of worker concerns raised/resolved; training completion records. | Review of induction logs, toolbox talk registers, worker concern log, training matrix maintained under the relevant Project and contractor arrangements | Weekly basis.                    | On board drilling unit, support vessels, and Igoumenitsa shore base. |

## 3 Brief project description

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The Project comprises a single offshore exploration well (Asopus-1) within Block 2 of the Greek EEZ in the northwestern Ionian Sea. It is an exploration activity designed to evaluate the presence and characteristics of potential hydrocarbon-bearing formations. Operations will be carried out using the Stena DrillMAX MODU and associated marine and aviation support services. The scope of the Project includes drilling, formation evaluation, and permanent plugging and abandonment of the well. No field development, hydrocarbon production, or export facilities are part of the Project scope assessed in this ESIA. The assessed design envelope covers one well, within a maximum offshore operational area of 0.79 km<sup>2</sup>, including a 500 m safety/exclusion zone around the drilling unit.

### 3.1 Project elements

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The Asopus-1 exploration well is located in Block 2 within the Greek Exclusive Economic Zone (EEZ) in the northwestern Ionian Sea. The site lies in deep water (~840 m), approximately 44 km offshore Othoni Island and about 3.2 km from the Italian EEZ boundary.

The well location was determined through the interpretation of available geological and geophysical data and the assessment of operational feasibility, water depth, navigational constraints, environmental sensitivities, and adherence to the boundaries of the Block 2 Lease Agreement. No subsea infrastructure or coastal installations are present in the immediate vicinity of the well location.

A temporary 500 m safety zone will be established around the mobile offshore drilling unit (MODU) during drilling operations, in accordance with applicable regulatory requirements and recognised offshore industry practice. The safety zone is intended to protect navigation and offshore operations.

The Project consists of a temporary offshore drilling operation supported by existing onshore logistics and aviation infrastructure. The principal offshore component is the drilling of the Asopus-1 well in approximately 840 m water depth with the Stena DrillMAX drillship, while terrestrial support will be provided through existing facilities at the Port of Igoumenitsa and Corfu International Airport (CFU). The activity is temporary in nature and limited to a single exploration well. Apart from the well, no major new permanent infrastructure is required either offshore or onshore.

#### 3.1.1 Main infrastructure and activities

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The Asopus-1 well is a vertical exploration well designed to evaluate subsurface geological formations. It will be constructed in staged sections, each reinforced with suitable barriers, including steel casing and cement to maintain well integrity and prevent environmental release. Drilling fluids will be used to stabilise the wellbore and transport cuttings to the surface once the riser is connected.

After drilling and evaluation, the well will be plugged and abandoned in accordance with applicable regulatory requirements and recognised offshore industry practices. The final well design will be confirmed during detailed well planning and submitted to the relevant authorities in a timely manner for approval.

The principal project infrastructure is the Stena DrillMAX drillship, a dynamically positioned DP3 mobile offshore drilling unit (MODU) designed for deepwater drilling. The vessel has indicative dimensions of 228

m in length, 42 m in beam, and can operate in water depths up to 3,000 m. This operating envelope exceeds the maximum anticipated project water depth of approximately 840 m, confirming the technical suitability of the selected unit for the planned activities.

Offshore activities include mobilisation of the drilling unit, well construction and evaluation, operation of support vessels and remotely operated vehicle (ROV) systems, routine marine and aviation logistics, and subsequent plugging and abandonment (P&A) of the well. Drilling operations will utilise water-based drilling fluids (WBM), with no planned use of non-aqueous drilling fluids. The Stena DrillMAX will maintain position using a dynamic positioning system, and no anchors are planned, thereby avoiding anchor-related seabed disturbance.

The drilling programme is designed to progress sequentially from shallow formations to the target total depth, with well integrity maintained at all stages through drilling, casing, cementing, and pressure control systems, which will be timely submitted to HEREMA for approval as part of the Notification of Well Operations (NoWO) prior to drilling.

Drilling begins with riserless operations in shallow sections, where seawater and viscous sweeps are used, and cuttings are discharged in the immediate vicinity of the well location. This includes conductor jetting and drilling of the top-hole sections required to establish the well structure.

After installation of the blowout preventer (BOP) and marine riser, drilling continues in a controlled, closed-loop environment.

The deeper sections of the well (17½", 12¼", and 8½") are drilled with progressively smaller casing strings installed and cemented at each stage to ensure zonal isolation and structural stability. Drilling fluids are circulated between the drillship and the wellbore. Cuttings are returned to the vessel and processed onboard, while fluids are conditioned and reused where appropriate.

Well pressure is continuously managed through mud weight and, where required, Managed Pressure Drilling (MPD) may be used to drill the deeper formation target(s). If abnormal pressure conditions occur (a "kick"), the fluid hydrostatic pressure and the MPD backpressure (if applicable) will provide margin to manage uncertainty. In the unlikely scenario that an influx enters the well, MPD may be used to manage pressure conditions within the drilling window. Should a well control event occur, well control procedures would be implemented using the BOP and associated well control systems in accordance with the Well Control Bridging Document.

In the unlikely event of failure of the primary barrier (hydrostatic pressure) and secondary barrier (BOP), a pre-installed Emergency Shut-In Device (E-SID) is located subsea within the stack between the wellhead and the blowout preventer. The E-SID provides an additional independent means of isolating the well and can be activated to shut in the well in accordance with established well control procedures, thereby significantly reducing the potential for escalation.

Formation evaluation is carried out during and after drilling using a combination of logging-while-drilling (LWD), wireline logging, mudlogging, and biostratigraphy. These methods provide continuous geological and petrophysical data and support real-time operational decisions. A Vertical Seismic Profile (VSP) may also be conducted as part of wireline logging operations. Where undertaken, VSP activities will constitute a temporary source of underwater acoustic energy during the drilling programme and are assessed further in Chapter 10.

A range of contingency measures is included within the drilling design envelope, such as:

- Side-tracking or re-spudding if well conditions require bypassing or restarting sections,
- Temporary suspension in cases of weather or operational constraints,
- Loss circulation treatments using specialist materials,
- Emergency disconnect procedures in extreme scenarios,
- Limited use of mechanical pipe severance tools if required.

Overall, the drilling phase is characterised by a tightly controlled, sequential operation with multiple engineered barriers to prevent loss of well control, and a suite of standard offshore practices to manage environmental risks, particularly related to drilling discharges, underwater noise, and logistical emissions.

### 3.1.2 Support infrastructure

A logistics system will support the drilling operations, comprising platform supply vessels (PSVs) transporting equipment, materials, and consumables between the Port of Igoumenitsa and the drillship; helicopter transfers between the drillship and Corfu International Airport (CFU) for personnel transport and emergency response activities; and temporary logistics facilities within the existing port infrastructure at Igoumenitsa. No new permanent construction is required.

Marine support will be provided by two platform supply vessels (PSVs) operating between the drillship and Igoumenitsa.

Onshore activity is limited to the temporary use of existing port infrastructure at the Port of Igoumenitsa and CFU. No construction, expansion, or modification of facilities is required. The supply base will support the routine handling of materials and waste within an existing commercial port environment, operated in accordance with existing port management procedures and applicable permits.

A temporary onshore logistics base will be established within a secure, restricted zone at the Port of Igoumenitsa to support the offshore exploration drilling campaign. This temporary hub will function as a storage, staging, and load-out area for equipment and materials, with temporary installations such as fencing, containerised structures, and limited personnel facilities. All operations will be coordinated with port authorities and, where practicable, scheduled to avoid peak congestion periods. All temporary installations will be removed upon completion of the campaign.

Corfu International Airport will support routine helicopter crew transfer operations, including use of a temporary hangar installed within the existing airport footprint. These support components will utilise existing airport and port infrastructure and will be temporary. Helicopter operations will use existing airport infrastructure and established flight routes and may also support emergency response if required.

Helicopters will primarily support routine crew changes (~50–60 personnel per week) and be available in the unlikely event of an emergency medical evacuation. Operations will be conducted in accordance with aviation safety regulations, in coordination with relevant authorities, and subject to meteorological and air traffic control constraints. Routing will consider safety and, where practicable, minimise overflight of sensitive onshore areas.

## 3.2 Development phases

The Project will be executed as a temporary offshore exploration drilling campaign currently planned to commence in February 2027, subject to operational and regulatory requirements. No field development or hydrocarbon production activities form part of the Project.

The activity sequence includes mobilisation and preparation, drilling and well evaluation, followed by well decommissioning, rig release, and removal of temporary onshore facilities. The expected offshore campaign duration is approximately 57 days for a dry well and 67 days if hydrocarbons are encountered. Quantities presented in this chapter are based on the planned operational duration of up to 67 days, while the 90-day duration represents a conservative scheduling envelope for environmental assessment purposes.

All offshore activities will cease once the exploration programme is completed and the drillship departs the site. The activity will be conducted on a continuous 24-hour basis during offshore operations.

### 3.2.1 Mobilisation phase

The mobilisation phase consists primarily of mobilisation, temporary installation and operational preparation activities. This phase includes the readiness of the MODU and support vessels, the temporary configuration of onshore support areas, and the establishment of aviation and shore base support required for the drilling campaign.

#### 3.2.1.1 Offshore activities

During mobilisation, offshore activities will comprise pre-mobilisation checks, verification of vessel readiness, loading of materials, consumables, and equipment, transit of the MODU to the Asopus-1 well location, and preparatory activities prior to the commencement of drilling operations. The MODU and support vessels will undergo statutory, technical and environmental readiness checks, including verification of pollution prevention systems, ballast water management arrangements, and operational safety systems, prior to entering the Project operational area.

The drilling unit will be loaded with the required consumables and materials, such as fuel, water, equipment, and stores, before departing its mobilisation location abroad and will be supplemented through the logistics arrangements. Where applicable, items will be transported to the Igoumenitsa supply base using existing transport routes, primarily via established road freight services and, where necessary, by coastal or regional marine transport.

No drilling activities or well-related seabed intervention will take place during mobilisation. Offshore drilling will begin only after the drilling unit arrives at the well location, completes required positioning and pre-spud checks, and meets all regulatory, operational, and safety requirements.

The drillship will mobilise to the well location under its own propulsion and, upon arrival, will be positioned using its DP3 dynamic positioning system, without the use of anchors. Temporary acoustic positioning transponders will be deployed on the seabed to support accurate station-keeping, and the unit will be ballasted as required to achieve drilling draft and operational stability. Prior to spudding the well, an ROV will

undertake a seabed inspection in the immediate vicinity of the proposed well location to verify seabed conditions and identify any obstructions or environmental features relevant to drilling operations.

Marine logistics during mobilisation will include transfer of drilling materials, bulk supplies, water, fuel, provisions and operational equipment from the shore base to the MODU using platform supply vessels (PSVs). Support vessels will also assist with offshore readiness, initial resupply and operational support in advance of drilling commencement. Mobilisation activities will be temporary and confined to the period necessary to safely establish the drilling unit on location and prepare for the start of drilling operations.

### 3.2.1.2 Onshore logistics support and transport base

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The supply base will function solely as a logistics interface between onshore services and offshore operations. During mobilisation, the Igoumenitsa Supply Base will provide facilities for the receipt, storage, handling and dispatch of drilling materials, equipment and consumables associated with offshore operations, as well as support vessel logistics and personnel coordination. Temporary installations may include portable office units, security and access-control arrangements, designated cargo and waste zones, and supporting mobile equipment such as forklifts, trailers, heavy-duty trucks and call-out crane services. No dredging, quay modification, land reclamation or major ground works are foreseen.

Where required, the supply base may temporarily store oil spill Tier 1 response equipment, such as booms, skimmers and absorbents, in designated areas to support rapid mobilisation.

A temporary helicopter support arrangement will also be established at Corfu Airport within the existing airport operational boundary. The temporary hangar will provide sheltered facilities for helicopter parking, routine inspection, maintenance support, equipment storage and operational preparation associated with crew transport and emergency response activities.

## 3.2.2 Drilling phase

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The operation phase consists of continuous offshore drilling and logistics support, conducted on a 24-hour/day, 7-day/week basis. The offshore unit will remain on station only for the time required to complete the exploration drilling programme. During operations, the persons on board (POB) may reach up to 180 personnel on the drillship, while support vessels typically carry 12–18 personnel each.

### 3.2.2.1 Offshore activities

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Offshore activities will include deployment and positioning of the MODU using dynamic positioning, conductor jetting, drilling of successive well sections, casing and cementing, mud circulation and solids control, wireline and logging-while-drilling (LWD) operations, and well plug-and-abandonment. The drilling programme will utilise water-based mud systems throughout and will extend to an indicative final depth of approximately 3,750 m measured depth below seabed through five main well sections.

The MODU will remain on station without anchors, and a temporary 500 m safety zone will be maintained around the drilling unit for the duration of drilling operations. Routine offshore support will be provided by up to two platform supply vessels (PSVs) and regular helicopter crew change operations between the MODU



and CFU, together with intermittent drillship-deployed ROV support for seabed inspection, subsea equipment monitoring and post-operation clearance verification.

Offshore activities will involve the use and storage of drilling materials, fuel, and water, as well as the management of wastes and discharges during the campaign. All offshore wastes and discharges will be managed in accordance with applicable Greek and EU legislation and requirements, MARPOL requirements and project-specific environmental and emergency response procedures.

### 3.2.2.2 Onshore logistics support and transport base

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A temporary onshore logistics base will be established within a secure, restricted zone at the Port of Igoumenitsa to support the offshore exploration drilling campaign and will be fully mobilised before the drilling unit arrives at the well location. This temporary hub will serve as a storage, staging and load-out area for equipment and materials, including secure fencing, storage shelters, containerised structures, and limited personnel facilities. Activities at the logistics base will be coordinated with the Port Authority and port operators as required.

The supply base is expected to operate within a defined port area of up to approximately 10,000 m<sup>2</sup> of open storage space, supported by covered storage areas and access to a dedicated quayside. Operations will be supported by conventional equipment such as forklifts, trailers, trucks and crane services, with designated zones for storage, cargo handling, waste handling and traffic circulation.

In parallel, Corfu International Airport will support routine helicopter operations for crew changes and emergency response, using temporary project-specific arrangements within the existing airport footprint.

All onshore logistics activities will be temporary in nature and conducted in accordance with applicable port, airport, environmental, and safety requirements.

## 3.2.3 Decommissioning phase

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Following completion of the exploration drilling and formation evaluation, the Project will enter a decommissioning phase during which the well will be plugged and abandoned, the remaining equipment and materials will be backloaded, the rig will demobilise, items will be returned to vendors where possible, and temporary onshore components will be disassembled. Decommissioning will be implemented in accordance with the approved well programme, applicable regulatory requirements and recognised offshore industry practice.

### 3.2.3.1 Offshore decommissioning and restoration

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Offshore decommissioning includes plugging and abandonment (P&A) of the well with verified barriers, followed by the retrieval of the marine riser, BOP and ancillary subsea equipment, and demobilisation of the MODU. The wellhead will remain in place following abandonment, in accordance with the approved abandonment programme and recognised industry practice for deepwater wells, where it does not present a constraint to navigation, fishing activities, or routine marine use of the area. A post-operation ROV seabed survey will be undertaken to inspect the vicinity of the wellbore.

### 3.2.3.2 Onshore decommissioning and restoration

Onshore decommissioning will include removal of temporary logistics installations, portable offices, temporary storage arrangements, fencing and project-specific equipment from the supply base and helicopter support areas. All waste streams and remaining materials will be removed from the site, and the operational areas will be restored to their original or otherwise agreed operational condition in coordination with the relevant port and airport authorities.

## 3.3 Raw materials, energy and water resources

The Project requires a range of consumables, materials and utilities to support offshore drilling operations and temporary logistics activities. The principal resource demand relates to offshore operations, including drilling materials, fuel, water and power generation. Onshore resource demand is comparatively minor and limited to temporary logistics support functions.

### 3.3.1 Requirements of raw materials

Raw material and chemical requirements are principally associated with well construction and drilling support. These include steel tubulars and casing, cement, barite, water-based mud additives, operational chemicals, and general offshore consumables required for safe execution of the drilling program. Only water-based mud systems are proposed; non-aqueous drilling fluids are not part of the Project basis.

#### 3.3.1.1 Offshore activities

Chemical selection is based on technical performance and environmental compatibility, with preference given to substances classified as Pose Little Or No Risk (PLONOR). The main chemicals used will be drilling and cementing materials for the riserless and riser-based well sections. Based on the current drilling chemicals inventory (Chemical Use Plan, Annex 05), the estimated offshore chemical requirement is approximately 5,635 t, comprising around 4,217 t of water-based mud (WBM) additives, 1,418 t of cement and cement additives, and about 0.75 t of spacer chemicals.

For the riserless sections, the estimated requirement is approximately 1,595 t with the principal materials comprising Class G cement (725 t), barite (375 t - contingency) and NaCl (297 t), together with smaller quantities of PAC, CMC, starch, XC polymer, caustic soda and other additives used for mud conditioning and cement performance.

For the riser-based sections, the estimated requirement increases to approximately 4,040 t, reflecting the greater depth and complexity of the deeper hole sections. The main materials in this phase include barite (1,372 t - contingency), NaCl (581 t), sized CaCO<sub>3</sub> (462 t), Class G cement (499 t), KCl (388 t), oxygen scavenger (180 t) and bentonite (136 t - contingency), supplemented by additional mud and cement additives required for wellbore stability, fluid loss control and cementing.

Overall, offshore raw material demand will be driven primarily by weighting agents, cement systems, inhibition salts and fluid-control additives. All chemicals will be stored, handled and transferred in

accordance with the approved drilling fluids programme and applicable environmental, health and safety requirements.

### 3.3.1.2 Onshore logistics support and transport base

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Onshore raw materials will comprise tubulars, wellheads, packaged drilling supplies, maintenance materials, temporary chemical stocks and general logistics consumables. These materials will be held only temporarily at the supply base and managed through designated laydown, segregation and handling zones. No bulk liquid mud plant will be installed at Igoumenitsa, and no large-scale process storage is required onshore.

## 3.3.2 Water requirements

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Water demand is associated with drilling activities, cement preparation, cooling systems, domestic use, sanitation, equipment washdown and ballast operations. The Project is designed to minimise freshwater import by relying primarily on direct seawater abstraction and onboard water production systems.

### 3.3.2.1 Offshore activities

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Water demand for the Project will be met primarily using seawater and onboard desalination systems installed on the Stena DrillMAX. Seawater will be used for drilling fluid preparation and cementing operations, reducing the requirement for externally supplied freshwater by approximately 23,000 m<sup>3</sup> over the course of the campaign.

Freshwater for domestic, sanitary, and operational purposes will be produced onboard using reverse osmosis (RO) units and a thermal evaporator, with production averaging 90 m<sup>3</sup>/day and peaking at 230 m<sup>3</sup>/day. Freshwater consumption is primarily associated with sanitary use (70.5 m<sup>3</sup>/day), boiler operation (up to 15 m<sup>3</sup>/day) and deck washing (5.7–8.0 m<sup>3</sup>/day).

As a contingency measure, up to 954 m<sup>3</sup> of potable water may be supplied from shore facilities in the unlikely event of a prolonged outage of the onboard water production systems.

The largest seawater requirement is for the cooling water system, which will abstract approximately 90,080 m<sup>3</sup>/day on average (97,760 m<sup>3</sup>/day at peak). Additional seawater will be used as feedwater for the desalination systems (~1,415 m<sup>3</sup>/day) and for ballast operations, which may require temporary seawater transfers during ballast exchanges (up to approximately 28,000 m<sup>3</sup> at rig release).

Overall, the Project's reliance on seawater and onboard freshwater generation minimises demand for externally supplied freshwater resources.

### 3.3.2.2 Onshore logistics support and transport base

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Onshore water demand is expected to be low and will be supplied through existing port and airport utilities. Use will be limited to staff welfare, hygiene, cleaning and minor operational needs associated with short-term cargo handling and logistics support.

### 3.3.3 Energy requirements

#### 3.3.3.1 Offshore Activities

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Energy consumption associated with the Project will be dominated by offshore operations, particularly fuel use by the Stena DrillMAX, support vessels and helicopter transport. Based on a conservative assessment, the drillship is expected to consume approximately 43 tonnes/day of marine gas oil (MGO) during drilling operations, resulting in an estimated 2,881 tonnes of fuel use over the 67-day campaign. The two support vessels are estimated to consume up to 25 tonnes/day, equivalent to approximately 1,675 tonnes over the campaign, under the conservative assumption that both vessels are continuously underway throughout the campaign.

Total offshore MGO consumption is therefore conservatively estimated to be 4,556 tonnes. For context, the estimated offshore MGO consumption for the Project (approximately 4,556 tonnes) is broadly comparable to the fuel capacity of a large ocean-going cruise vessel like those operating in the wider area of the North Ionian Sea. Helicopter operations for crew changes and logistics are conservatively estimated to consume approximately 134 tonnes of Jet A-1 fuel over the campaign.

All marine vessels will use MGO or equivalent compliant fuel with a maximum sulphur content of 0.10%, in accordance with MARPOL Annex VI and Mediterranean Sea SOx Emission Control Area requirements.

#### 3.3.3.2 Onshore logistics support and transport base

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Onshore energy consumption will be limited to temporary logistics activities at the Port of Igoumenitsa and personnel transfers via Corfu International Airport. Shore base energy use will primarily comprise electricity supplied through the existing port grid and diesel consumption by cargo-handling equipment, forklifts, cranes and transport vehicles.

Onshore fuel demand is primarily associated with trucks, forklifts, cranes and light vehicles supporting cargo transfer and waste handling. Based on the ESIA assessment, onshore support activities are a comparatively minor fuel consumer relative to offshore operations, with no requirement for major permanent fuel storage installations. Average fuel consumption for shore base equipment is conservatively estimated at approximately 353 litres/day and is expected to remain modest due to the temporary nature of the Project and reliance on existing infrastructure.

No additional energy generation facilities or dedicated energy supply systems will be required.

## 3.4 Discharges and waste

### 3.4.1 Wastewater

#### 3.4.1.1 Offshore activities

Operational discharges from the Stena DrillMAX and associated support vessels will be managed in accordance with MARPOL Annexes I, IV and V, the Ballast Water Management Convention, and applicable Greek, EU, and flag-state requirements, consistent with the Offshore Protocol principles of pollution prevention, source minimisation and use of best available techniques.

Over the 67-day campaign, the main discharge streams are as follows:

- Bilge water / oily drainage: approximately 302 m<sup>3</sup> total (average 4.5 m<sup>3</sup>/day, peak 20 m<sup>3</sup>/day), treated via oily water separators to a 15 ppm oil limit before discharge.
- Deck drainage (rainfall + washdown): approximately 21,420 m<sup>3</sup> total (average ~320 m<sup>3</sup>/day, peak 525 m<sup>3</sup>/day) as the well will be drilled during the rainy season. Potentially contaminated drainage from open decks, the drill floor, and other operational areas is managed through segregation and oily water treatment where required.
- Boiler blowdown: approximately 36 m<sup>3</sup> total, released intermittently during maintenance cycles.
- Ballast water: approximately 29,474 m<sup>3</sup> total operational discharge, plus a one-off ~28,000 m<sup>3</sup> discharge during de-ballasting at end of drilling.
- Desalination brine: approximately 94,577 m<sup>3</sup> total (evaporator and RO), discharged after dilution within the cooling water systems.
- Treated sewage: approximately 1,371 m<sup>3</sup> total (20.5 m<sup>3</sup>/day) treated to MARPOL Annex IV standards
- Grey water: approximately 3,015 m<sup>3</sup> total (45 m<sup>3</sup>/day) discharged via segregated drainage systems in accordance with applicable MARPOL requirements.

The total quantity of cooling water will be approximately 6.0 million m<sup>3</sup> over the Project, with an average flow of around 90,080 m<sup>3</sup> per day and peak flows reaching approximately 97,760 m<sup>3</sup> per day. Cooling water comprises non-contact seawater that is returned to the marine environment following heat exchange and is not expected to contain process contamination.

Other wastewater streams (bilge, ballast, sewage and desalination brine) are subject to treatment, monitoring and regulatory controls to ensure compliance with MARPOL and associated environmental standards.

All hazardous and non-routine liquid waste streams (including waste oils, chemicals, paint residues and spill clean-up materials) will be fully contained and transferred to shore for authorised treatment or disposal, with no planned marine discharge.

### 3.4.1.2 Onshore logistics support and transport base

Portable chemical toilets will be provided for about six shore base personnel within the Supply Base operational area. They will be regularly serviced and maintained by a licensed contractor to ensure hygiene and sufficient capacity. Waste will be collected and transported by authorised providers to licensed treatment and disposal facilities in line with regulations. Overall wastewater generation is expected to be minimal due to the small workforce and temporary nature of the activity.

## 3.4.2 Discharges and waste

### 3.4.2.1 Offshore activities

Offshore waste and discharge streams are generated primarily from drilling operations, vessel activities, and routine offshore support functions. The largest material streams associated with the drilling programme comprise drilling fluids and cuttings, which are discharged in accordance with the approved programme.

During drilling, approximately 490 tonnes (189 m<sup>3</sup>) of claystone and calcareous rock cuttings are discharged to the seabed during riserless operations, with a further ~453 tonnes (174 m<sup>3</sup>) discharged at 12 m below sea level during riser-based drilling sections. In parallel, water-based drilling muds are reused and recirculated where possible, but still result in discharges of ~1,318 tonnes (1,156 m<sup>3</sup>) to the seabed and ~2,470 tonnes (2,058 m<sup>3</sup>) at a depth of 12 m below sea level over the drilling campaign.

Additional operational discharges include cementing activities, with a worst-case seabed discharge of around 155 tonnes (64.6 m<sup>3</sup>) of cement slurry during cementing of the 20-in casing and up to ~15 m<sup>3</sup> (~28 tonnes) from cleaning and residual surface returns. Bulk material losses are minimal, estimated at less than 0.05 m<sup>3</sup> over the full programme.

Well control and operational systems also contribute minor discharges. Routine testing and maintenance of the blowout preventer (BOP) result in the release of seawater containing up to 4.5% hydraulic fluid (Stack Magic ECO V2). The total campaign discharge is estimated at approximately 42.9 m<sup>3</sup>, of which approximately 1.9 m<sup>3</sup> comprises hydraulic fluid. These discharges occur intermittently.

Contingency operations may generate additional but infrequent discharges, including up to 174 m<sup>3</sup> of cuttings, 48–60 m<sup>3</sup> of cement, and up to 174 m<sup>3</sup> of WBM, depending on operational conditions.

Other offshore waste streams are relatively minor by comparison. Over the 67-day campaign, food waste generated onboard is conservatively estimated at ~189–209 kg per day, resulting in a total of approximately 12.7 tonnes. Municipal solid waste from onboard activities includes approximately 1.2 tonnes of non-recyclable waste, 1.5 tonnes of paper and cardboard, 2.35 tonnes of metals, and smaller quantities of plastics (~56 kg), electronic waste (~375 kg) and used cooking oil (~75 kg).

Hazardous waste is generated in controlled quantities during offshore operations. Typical weekly generation includes approximately 3 m<sup>3</sup> of oily sludge, 480 kg of oil-contaminated waste, 750 kg of chemical waste, and 150 kg of paints and solvents, all of which are stored onboard and transferred to licensed onshore facilities.

### 3.4.2.2 Onshore logistics support and transport base

Onshore waste is limited to activities at the shore base at the Port of Igoumenitsa, where a small workforce of approximately six personnel supports logistics, coordination, and vessel operations. No industrial processing is undertaken at this location.

As a result, waste generation is relatively minor and consists mainly of routine office and welfare-related materials. Municipal waste generation is estimated at approximately 10–12 kg per day, reflecting food packaging, paper products, and general housekeeping waste. The majority of onshore waste is associated with logistics, packaging materials, cargo handling and temporary project support activities rather than routine office occupation.

Non-recyclable general waste is approximately 2.3 tonnes during mobilisation, 5.3 tonnes during operational support, and 2.3 tonnes during demobilisation. Similar scaled quantities apply to other waste streams, including approximately 0.6–1.6 tonnes of paper and cardboard per phase, 0.9–1.7 tonnes of metals, and smaller quantities of food waste (0.22–0.6 tonnes per phase) and plastics (~45–80 kg per phase).

All onshore waste streams are temporarily stored at the shore base and then transferred to licensed waste contractors for recycling, recovery, or disposal in accordance with established port and regulatory systems.

## 3.5 Air emissions

### 3.5.1 Offshore activities

Air emissions associated with the Project will arise primarily from fuel combustion by the Stena DrillMAX drillship, offshore support vessels, helicopter transfers, and a small amount of diesel-powered equipment at the onshore logistics base. The emission profile is therefore dominated by routine operational energy use rather than any process-related releases, as no well testing, flaring, or venting activities are planned.

The drillship is equipped with six IMO Tier I compliant diesel engines and, together with support vessels and limited helicopter operations, represents the main source of atmospheric emissions. Conservative fuel consumption during the 67-day campaign is approximately 2,881 tonnes for the drillship, 1,675 tonnes for support vessels, and 134 tonnes for helicopter operations. These activities generate combustion-related pollutants including nitrogen oxides (NO<sub>x</sub>), sulphur oxides (SO<sub>2</sub>), carbon monoxide (CO), particulate matter (PM<sub>10</sub>), and greenhouse gases.

On a daily basis, total offshore emissions are estimated at approximately 4.9 tonnes of NO<sub>x</sub>, 0.13 tonnes of SO<sub>2</sub>, 0.26 tonnes of CO, and 0.07 tonnes of PM<sub>10</sub>. Over the full campaign duration, this equates to approximately 331 tonnes of NO<sub>x</sub>, 8.4 tonnes of SO<sub>2</sub>, 17.6 tonnes of CO, and 4.9 tonnes of PM<sub>10</sub>. These emissions are short-term in nature and occur offshore under conditions of strong atmospheric dispersion, more than 44 km from the nearest coastline, with low-sulphur marine fuel used in accordance with Mediterranean Emission Control Area requirements.



### 3.5.2 Onshore logistics support and transport base

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Onshore emissions are associated with the intermittent operation of mobile diesel-powered equipment such as forklifts, cranes, and trucks used within the Port of Igoumenitsa supply base. Given the limited scope of activity and the use of existing port infrastructure, emissions are low and localised, amounting over the campaign to approximately 642 kg of NO<sub>x</sub>, 212 kg of CO, 66 kg of NMVOCs, and 41 kg of particulate matter.

## 3.6 Carbon footprint

### 3.6.1 Offshore activities

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In terms of greenhouse gas emissions, the Project's carbon footprint is dominated by offshore fuel combustion. Total Scope 1 emissions are conservatively estimated at approximately 15,596 tonnes of CO<sub>2</sub> equivalent over the 67-day campaign. Of this total, the drillship accounts for the majority at around 9,554 tCO<sub>2</sub>e, or 61.3%, followed by support vessels at approximately 5,555 tCO<sub>2</sub>e, or 35.6%, while helicopter operations contribute about 426 tCO<sub>2</sub>e, or 2.7%. Onshore activities represent a marginal contribution of approximately 62 tCO<sub>2</sub>e or less than 0.4%.

Carbon dioxide is the principal greenhouse gas emitted, with smaller contributions from methane and nitrous oxide, both arising from fuel combustion. Overall, emissions are consistent with those expected from a short-duration offshore drilling campaign, in which energy demand for marine propulsion and power generation is the primary driver of the environmental load.

Given the temporary 67-day duration, the offshore location and the absence of production testing or flaring, greenhouse gas emissions are primarily associated with fuel combustion for drilling, marine transport, and power generation. The overall carbon footprint reflects the inherently energy-intensive nature of offshore drilling activities rather than any abnormal or process-specific emission source.

### 3.6.2 Onshore logistics support and transport base

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The onshore carbon footprint arises primarily from the use of small-scale diesel-powered mobile equipment such as forklifts, cranes, trucks, and other handling vehicles used intermittently for loading, unloading, and transferring materials and waste.

Fuel consumption associated with these activities is relatively low, reflecting the limited scope of operations and short duration of use. Total onshore fuel use is estimated at approximately 19.7 tonnes of diesel over the campaign, resulting in direct greenhouse gas emissions of around 62 tCO<sub>2</sub>e (Scope 1).

These emissions are minor when compared with offshore activities and represent only a small fraction of the overall Project carbon footprint. They are temporary in nature and confined to an existing industrial port setting, where similar emissions are already present from routine port operations and vessel activity.

## 3.7 Noise and vibration emissions

### 3.7.1 Offshore activities

Underwater and airborne noise associated with the Project will arise from offshore drilling activities, vessel operations, helicopter movements, and limited subsea activities. The assessment focuses on Project-related anthropogenic noise sources that may affect marine fauna through disturbance, masking, behavioural responses, or, in extreme cases, injury.

Airborne noise from a vessel is generated primarily by machinery onboard the drillship and support vessels, including engines, generators, pumps, and deck equipment. However, because the drillship will operate at least 44 km offshore, airborne noise at shore is expected to attenuate completely before reaching sensitive receptors. As a result, no significant onshore airborne noise impacts are anticipated.

Helicopter operations (using an AW139 or equivalent) will occur intermittently for crew changes and logistics support. Although helicopters generate short-duration noise from their engines and rotor systems, flights are infrequent and brief, and where possible, follow defined offshore routes. Given the offshore location and limited operational frequency, helicopter noise is also not expected to have perceptible impacts on onshore receptors.

Sound from offshore operations propagates through water as pressure waves and is measured in dB re 1  $\mu$ Pa, using metrics such as peak pressure, RMS levels, and frequency content. Continuous noise sources dominate most offshore environments, particularly in the low-frequency range, where shipping and large vessels are prevalent.

With regard to non-impulsive underwater noise, the dominant continuous underwater noise sources are the drillship and support vessels, primarily due to propulsion systems, thrusters, and propeller cavitation. Noise levels increase with vessel size, speed, and loading conditions. Representative source levels are ~195 dB re 1  $\mu$ Pa @ 1 m for the drillship and ~180–190 dB re 1  $\mu$ Pa @ 1 m for the support vessels.

These sounds are low frequency in nature and attenuate with distance from the source. In deep offshore conditions such as the Project area, sound propagation is expected to decrease significantly with distance due to free-field spreading and limited boundary reflections.

Additional non-impulsive contributions arise from:

- Helicopter overflights (minor underwater coupling only)
- ROV operations during inspection and subsea support (low-intensity, highly localised)

Impulsive underwater noise will occur only during Vertical Seismic Profiling (VSP) activities conducted during the formation evaluation process with wireline. VSP involves a small airgun array deployed near the sea surface, with a total source volume of approximately 1,000 in<sup>3</sup> and a limited number of shots (up to ~260 shots over short operational periods of ~12 hours).

The VSP source is designed to acquire geological information beneath the seabed and is substantially smaller than conventional seismic survey sources, resulting in a more limited spatial footprint and shorter duration of acoustic exposure.

To minimise potential disturbance to marine fauna, standard mitigation measures will be implemented, including soft-start procedures and, where practicable, visual monitoring for marine mammals before source activation. These measures are implemented in line with relevant Greek and EU regulatory requirements and regional best practice guidance.

In summary, underwater noise from the Project is dominated by continuous vessel and drilling-related sources, with a short-duration impulsive component limited to VSP operations. Airborne noise effects are negligible at shore due to the offshore location and rapid attenuation over distance.

Given the temporary nature of the drilling campaign, the offshore location, and the limited duration of VSP activities, mitigation measures such as operational controls, soft-start procedures, and compliance with applicable environmental protection requirements will further reduce the potential for disturbance to sensitive marine species.

### 3.7.2 Onshore logistics support and transport base

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Noise emissions at the shore base are similarly limited and are associated to the intermittent operation of mobile equipment, including forklifts, trucks, cranes, and auxiliary machinery used for cargo handling and storage.

Noise is expected to be typical of standard port operations, consisting mainly of short-duration, low-frequency mechanical noise associated with engine use, lifting operations, and vehicle movements. Because activities will take place within an established port area, these sound sources will be absorbed into the existing industrial noise environment.

The temporary nature of operations, combined with the limited number of personnel (approximately six workers) and the absence of heavy construction or continuous industrial activity, means that noise generation will be intermittent rather than continuous. Any potential disturbance will therefore be localised within the port boundary and will not extend to surrounding residential receptors at significant levels.

## 3.8 Electromagnetic radiation and radioactivity emissions

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Radioactive materials are not routinely used or stored on board the Stena DrillMAX, except for sealed radioactive sources that may be temporarily deployed during downhole logging operations for geological formation evaluation. Typical sources include americium-beryllium (Am-241/Be) and caesium-137 (Cs-137).

These sources are fully encapsulated within specialised tools, used only temporarily during drilling, and are always retrieved back to the surface after each operation, with no discharge or release to the marine environment. Their use is strictly controlled under licences issued by the Greek Atomic Energy Commission (EEAE) and regulated in accordance with EU radiation safety legislation (Euratom Directive 2013/59).

Accumulation of naturally occurring radioactive material (NORM) is not expected, as the Project includes a temporary exploration well and does not involve hydrocarbon production or processing.

Overall, radiological sources are used only intermittently, remain fully contained within engineered systems, and are managed under strict regulatory control.

## 4 Project rationale and objectives

### 4.1 Energy security

The Project is undertaken within a broader national and European energy-security framework (see Section 5.3.4 on the Legislative Framework for Energy Security), where the reliability, resilience, and diversification of energy supply have become increasingly important considerations for Greece, Italy, and the European Union (EU) under Article 194 of the Treaty on the Functioning of the European Union (TFEU) and Regulation (EU) 2017/1938 concerning measures to safeguard the security of gas supply. Strengthening understanding of domestic and regional resource potential supports informed long-term energy planning. It contributes to reducing exposure to supply disruptions originating outside the European energy system, as supported by the European Energy Security Strategy (2014) and the REPowerEU Plan (2022).

For Greece, offshore exploration in Block 2 represents a strategic opportunity to responsibly assess indigenous offshore resource potential using newly verified geological data from exploration drilling. The Project supports evidence-based decision-making by reducing subsurface uncertainty through measured data, thereby enabling realistic assessments of the role that domestic resources could play in Greece's future energy mix, subject to regulatory and policy frameworks. By assessing domestic resources, the Project could contribute to informing the national strategy, as described within Law 4001/2011 on the Operation of Energy Markets and Hydrocarbon Regulation and the National Energy and Climate Plan (NECP), including efforts to manage dependency on long-distance, higher-carbon-footprint energy imports and to strengthen the resilience of the Greek energy system during its transition to a renewables-based future, without pre-judging future policy decisions on hydrocarbon development.

The structure has been identified as potentially hydrocarbon-bearing, based on seismic interpretation. However, confirmation requires exploration drilling, as described in the following sections. If hydrocarbons are discovered, the results may inform future assessments of domestic energy resource potential, subject to subsequent appraisal, development decisions and regulatory approvals.

The geographic location of Block 2 in the north-western Ionian Sea, adjacent to the maritime boundary between Greece and Italy, places the Project within a broader regional energy context. In this setting, exploration activities contribute to improved geological understanding that may support coordinated energy planning between neighbouring EU Member States, consistent with the principles of cross-border cooperation, security of supply, and integrated European energy markets, clearly defined in the EU Maritime Spatial Planning Directive 2014/89/EU.

At the EU level, the Project aligns with broader objectives to enhance energy system resilience by improving knowledge of indigenous resource potential within European waters. While the Project itself is exploratory and does not pre-empt field development, the data generated may, if resources are confirmed, inform future discussions on supply diversification, regional infrastructure connectivity, and long-term energy security within the European Union.

Block 2 is characterised by a relatively high level of technical maturity, supported by modern seismic datasets and a clearly defined drilling target, recognising that key reservoir parameters and hydrocarbon presence remain uncertain prior to drilling. The proposed exploration well represents a milestone, as it marks

the resumption of offshore exploratory drilling investment in Greece after four decades, undertaken in accordance with contemporary technical, safety, and environmental standards.

A consortium of experienced national and international companies with established offshore expertise implements the Project. The partnership brings world-class deepwater expertise and confirms international confidence in Greece's energy sector. The Project will also result in the transfer of relevant high-resolution geological and environmental data to HEREMA, in accordance with applicable legal and contractual provisions, creating a long-term national scientific resource for basin evaluation and research.

The Project has been designed to comply with applicable Greek legislation, European Union requirements and relevant industry standards. Implementation of Project activities will remain subject to the conditions of all required permits, approvals and regulatory authorisations.

#### 4.1.1 Rationale and objectives from project implementation

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The purpose of the Project is to evaluate the hydrocarbon potential of the Asopus prospect within Block 2, through the drilling of one offshore exploration well and associated activities. The Project is intended to test a large, well-defined subsurface structure identified through extensive geological and geophysical studies, including the acquisition and interpretation of modern 3D seismic data. The Project targets the Asopus structure, which covers approximately 1,000 km<sup>2</sup> and represents the first offshore exploration well in Western Greece since 1981, when the West Katakolo Field was discovered. More broadly, it will be the first exploratory drilling activity in Greece since the onshore Epanomi-1 well was drilled in 1986. While the prospect is technically mature, the drilling involves geological uncertainty typical of frontier deepwater exploration. The Asopus-1 exploration well is expected to primarily target a reservoir for which internal pre-drill volumetric assessments indicate a mean-case gas-in-place estimate of approximately 270 billion cubic metres, under a range of geological assumptions.

##### 4.1.1.1 Project rationale

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The implementation of the proposed Asopus-1 exploration well is designed to evaluate the presence, nature, and properties of potential hydrocarbons within a previously undrilled geological play. While existing data indicate favourable subsurface conditions, exploration drilling is required to reduce geological uncertainty and to obtain direct information on reservoir characteristics, fluids, and pressures.

The Asopus prospect is the most technically mature and clearly defined undrilled structure in Block 2. Although seismic and geological data suggest favourable subsurface conditions, the prospect remains untested and is subject to the uncertainties typical of deepwater exploration in a previously undrilled area of the Ionian Sea. Internal volumetric assessments suggest the structure may contain potentially material volumes of hydrocarbons under various geological scenarios. Petroleum system analysis indicates the presence of essential elements for hydrocarbon accumulation, such as mature source rocks, viable migration pathways, and effective traps within Block 2. However, the presence, phase, and recoverability of any hydrocarbons can only be confirmed through exploration drilling.

The proposed well represents the next step in the phased exploration strategy for Block 2. The information generated through the Project will contribute to an improved understanding of domestic energy resource potential, supporting long-term energy security planning at national and regional levels. Results from drilling will be used to refine the geological model and inform any future appraisal or exploration decisions, which would be subject to separate technical evaluations, environmental assessments, and regulatory approvals. This ESIA only addresses the environmental assessment of the Asopus-1 drilling operation; any subsequent appraisal or development activities would be subject to separate environmental assessment and permitting in accordance with Greek and EU law.

All relevant data acquired will be shared with the Hellenic Hydrocarbon and Energy Resources Management Company (HEREMA), in line with applicable Greek legislation, Lease terms and regulatory guidance, to enhance the national geological database.

The Project forms part of Energean's, together with its co-venturers', contractual obligations under the Block 2 Lease Agreement. The proposed activities are exploratory in nature and do not constitute a commitment to field development or hydrocarbon production. Any subsequent appraisal or development phase would be subject to separate technical studies, environmental assessments, and regulatory approvals.

#### 4.1.1.2 Project objectives

The primary objective of the Project is to safely and responsibly evaluate the hydrocarbon potential of the Asopus prospect by drilling one offshore exploration well, while ensuring full compliance with all environmental, safety, and regulatory requirements.

##### 4.1.1.2.1 Technical and operational objectives

The main technical and operational objectives of the exploration drilling campaign are to:

- Drill a single offshore exploration well (Asopus-1) targeting the Asopus prospect within Block 2, using a modern deepwater drilling unit and applying international good industry practice as a non-binding benchmark, while operating in accordance with applicable environmental, safety and regulatory requirements.
- Evaluate the main Asopus reservoir interval to evaluate reservoir presence, assess hydrocarbon type (if present), and acquire key petrophysical and pressure data.
- Evaluate the Top Cretaceous interval as a secondary, higher-risk exploration objective, subject to geological conditions encountered during drilling.
- Assess the effectiveness of the petroleum system within Block 2 by integrating well results with existing seismic and geological data, thereby reducing geological, volumetric, and play-level uncertainties.
- Acquire high-quality subsurface data that cannot be obtained through geophysical methods alone, including well logs, samples, and pressure measurements, to support future basin evaluation and inform any potential future exploration or appraisal decisions within Block 2.
- Provide all geological, geophysical, and environmental data required under applicable Greek legislation,

lease terms, and regulatory guidance to the Hellenic Hydrocarbon and Energy Resources Management Company (HEREMA), in accordance with its statutory mandate under Law 4409/2016, thereby contributing to the national offshore geological database.

#### 4.1.1.2.2 Environmental and execution objectives

Alongside its technical objectives, the Project is framed to ensure that exploration activities are conducted with sound environmental protection and operational control practices, in line with regulatory requirements. The main environmental and execution objectives include:

- Conducting all Project activities in full compliance with Greek legislation, European Union requirements, and applicable international standards for offshore exploration (see Chapter 5).
- Applying the mitigation hierarchy and precautionary principle through careful planning, use of best available techniques (BAT) and best environmental practice (BEP), and implementation of dedicated environmental monitoring programmes as described in this ESIA
- Implementing and maintaining robust well integrity, emergency preparedness, and oil spill prevention and response capability appropriate to deepwater operations.
- Protecting sensitive marine receptors through the application of mitigation and monitoring measures described in this ESIA, including measures related to underwater noise and marine biodiversity and associated reporting to competent authorities.

#### 4.1.1.2.3 Long-term knowledge objectives

Irrespective of the outcome of the exploration well, the Project is expected to deliver long-term value by generating geological, environmental, and operational knowledge. The Project will:

- Enhance understanding of the geological evolution and hydrocarbon potential of the Ionian Sea basin.
- Generate environmental baseline data that support marine scientific research, marine spatial planning, and future environmental assessments, and that will be made available to competent authorities and, where appropriate, the scientific community.
- Contribute to national institutional and technical capacity by applying contemporary offshore technical, safety, and environmental standards within the Greek regulatory framework.

These objectives support informed, evidence-based decision-making regarding Greece's offshore resource potential, without pre-judging future exploration, appraisal, or development outcomes.

### 4.1.2 Feasibility

Project feasibility has been assessed using available geological, geophysical, technical, operational, environmental, and logistical data. Although some key parameters for the Asopus prospect require confirmation through exploration drilling, current datasets provide a sound technical and operational basis for drilling an offshore exploration well in Block 2, offshore Greece.



The feasibility assessment does not assume or require further appraisal or development.

#### 4.1.2.1 Geological and subsurface

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Geological feasibility is supported by extensive pre-drill technical studies by Energean and its co-venturers. These include detailed seismic interpretation, structural mapping, and petroleum system analysis using modern 3D seismic data from Block 2.

The Asopus prospect is a large, well-defined geological structure with clear seismic expression and a well-understood regional-scale trapping configuration. Seismic data indicate laterally continuous stratigraphic intervals at the target reservoir level, with structural closure sufficient to retain hydrocarbons, if present. Petroleum system analysis indicates favourable conditions for hydrocarbon generation and charge within the wider Ionian Sea basin, including:

- the presence and maturity of source rocks at depth,
- viable migration pathways, and
- effective trapping and sealing configurations.

Internal pre-drill volumetric assessments, based on geological interpretation, seismic data, and analogues from offset wells in the Adriatic and Ionian region, indicate potential for hydrocarbons of material scale across various geological scenarios. However, key uncertainties regarding reservoir presence, quality, fluid type, and pressure regime can only be resolved through exploration drilling.

Therefore, drilling the Asopus-1 exploration well is technically feasible and is the appropriate next step to reduce geological uncertainty and validate subsurface interpretations.

#### 4.1.2.2 Technical and operational

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The Project is technically feasible with existing offshore drilling technology and proven operational solutions. Using a modern deepwater drilling unit is suitable for the expected water depth and subsurface conditions, enabling safe and controlled execution of the exploration well.

The well design, drilling programme, and marine operations comply with Greek and EU regulatory requirements, with international good industry practice serving as a supplementary, non-binding benchmark. The Project's limited duration and single-well scope further enhance operational feasibility by reducing cumulative risk and complexity.

Support activities, including marine logistics, aviation, and shore base operations, will utilise existing infrastructure and established service providers, ensuring that no permanent facilities are required. Similar offshore operations have been successfully executed by Energean and other operators in comparable deepwater environments within the Eastern Mediterranean.

#### 4.1.2.3 Environmental and regulatory

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Environmental feasibility has been assessed by identifying potential impacts, applying the mitigation hierarchy, and incorporating best available techniques and best environmental practice into the project design. The Project is specifically designed to minimise environmental disturbance by:

- limiting activities to a single well location with no well testing,
- restricting the duration of offshore operations,
- avoiding the installation of permanent infrastructure, where practicable, and
- implementing mitigation and monitoring measures for sensitive marine receptors.

Where residual impacts are predicted, they are expected, based on the current assessment, to be limited in extent, short-term in duration, and generally reversible, as described in the impact assessment chapters of this ESIA, subject to the implementation and effectiveness of the proposed mitigation and monitoring measures.

The regulatory framework governing offshore exploration in Greece is well established and implements EU legislation, including provisions on environmental assessment, offshore safety, and emergency preparedness. The Project can be executed in conformity with this framework, subject to the permits and approvals described in this ESIA and to any additional conditions or regulatory requirements that the competent authorities may impose.

Environmental baseline data collected for the Project, along with additional monitoring during execution, further support environmental feasibility by enabling adaptive management and regulatory oversight.

#### 4.1.2.4 Economic and financial

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The exploration well is a privately funded investment, with all geological, technical, and financial risks assumed by Energean and its co-venturers. The Project does not create any financial obligation for the Greek State.

No commercial development assumptions are required to establish exploration feasibility. Internal screening-level economic evaluations indicate that the proposed activity is an appropriate allocation of exploration capital within Energean's portfolio and is consistent with its risk management and investment decision processes. Any future appraisal or development, if hydrocarbons are discovered, would be subject to separate technical, economic, environmental, and regulatory evaluations.

#### 4.1.2.5 Conclusions

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Considering geological, technical, operational, environmental, regulatory, and financial factors, the Project is feasible as a limited-duration offshore exploration activity. Existing subsurface data indicate favourable conditions for exploration drilling, while acknowledging inherent uncertainties prior to drilling. The proposed well can be executed safely and responsibly using established technologies, within the regulatory framework, and with manageable environmental impacts as assessed in this ESIA.

The Project is a feasible and proportionate way to advance understanding of the offshore resource potential in Block 2, consistent with national regulatory requirements and international standards for offshore exploration.

### 4.1.3 Expected benefits on local, regional and national levels

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The Project is an offshore exploration activity and, as such, is limited in duration and spatial extent. While it does not involve production or long-term infrastructure, the exploration phase provides several environmental, economic, and social benefits, primarily through information generation, capacity building, and the application of modern standards and practices.

#### 4.1.3.1 Energy diversification and sustainable development

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Exploration activities in Block 2 contribute to improved understanding of offshore geological potential, enabling more informed planning regarding energy diversification and sustainable energy system development. By generating verified subsurface data, the Project supports evidence-based decision-making concerning the potential role of domestic resources in Greece's long-term energy transition, without predetermining whether any future hydrocarbon development will proceed (Section 5.3.4 Legislative Framework for Energy Security).

The Project is consistent with the various principles of sustainable development by applying modern offshore technologies and good international industry practices to minimise environmental disturbance while generating information that may inform future policy and planning decisions. The exploration phase does not commit Greece to hydrocarbon development but provides the factual basis required to assess potential options in a structured and responsible manner.

Environmental protection is embedded in Project design and execution through the application of best available techniques (BAT), best environmental practice (BEP), and precautionary management approaches, ensuring that potential environmental effects are identified, mitigated, and monitored in accordance with national and EU requirements (Section 5.4)

#### 4.1.3.2 Economic and community benefits

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Exploration activities associated with the Project may generate short-term economic benefits through the procurement of services, the use of specialised offshore logistics, and support activities linked to drilling operations, commensurate with the single-well, campaign-based nature of the Project. While offshore exploration relies on highly specialised international contractors, opportunities may arise for local and regional service providers, subject to technical suitability and availability. The exploration well represents a private investment of approximately €70–€80 million (Section 4.5). All financial and geological risks are borne by the Project proponents, with no capital risk to the Greek State or the public.

The Project may also have indirect benefits by reinforcing Greece's position as an active and credible offshore operator jurisdiction that applies contemporary technical, safety, and environmental standards. This

can contribute to longer-term confidence in the regulatory and operational framework governing offshore activities.

Energean anticipates that approximately €12 million in Project expenditure could be directed toward the national and local economy through increased activity in logistics, transportation, and supplies, and through the use of existing infrastructure and the development and application of specialised technical know-how, subject to contractor selection, operational performance, and market conditions. Energean and its co-venturers will carry out proportionate and timely engagement with affected and interested stakeholders, in line with EU requirements on access to environmental information and public participation in environmental decision-making (including the Aarhus Convention, as implemented in EU law). This includes engagement with relevant local professional, academic and business organisations, such as the Technical Chamber, Commercial Chamber, Ionian University and hotel associations, as well as other stakeholders identified through the permitting process. Energean will maintain clear and transparent stakeholder communication throughout the permitting and exploration process, consistent with applicable EU and national requirements relating to environmental information, consultation and stakeholder engagement.

In the event of a commercial discovery and subsequent appraisal and development, any potential fiscal revenues would be determined by the applicable profit-sharing regime and prevailing market conditions, and would be subject to separate economic, regulatory and environmental assessments.

#### 4.1.3.3 Employment benefits

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Employment benefits associated with the exploration phase of the Project are primarily related to onshore and near-shore support activities, including logistics, port operations, aviation services, accommodation, catering, transportation, and other ancillary services required to support offshore drilling operations.

The Project will require the use of an established shore base, port facilities, and air transport services, including personnel movements via Corfu International Airport, as well as accommodation and hospitality services in the wider regional area. These activities are expected to generate temporary demand for goods and services and provide business opportunities for local and regional service providers.

As a significant portion of offshore exploration activities are anticipated to take place outside the peak tourism season, Project-related demand for accommodation, transport, and related services may provide supplementary economic activity for local businesses during periods when tourism-related demand is generally lower. This may help support business continuity and employment in sectors that experience seasonal fluctuations.

The specialised nature of offshore drilling operations requires personnel with specific technical qualifications, offshore certifications, and operational experience. Consequently, a substantial proportion of the offshore workforce is expected to be sourced through experienced drilling and service contractors. Nevertheless, opportunities may arise to engage national personnel in shore-based, aviation, logistics, and support roles, subject to technical requirements and availability.

Where technically feasible and commercially competitive, the Project will seek to utilise qualified national suppliers and service providers in accordance with applicable procurement procedures and Project

requirements. To support local participation, the Project proponents intend to conduct supplier engagement activities, including workshops and information sessions aimed at increasing awareness of the technical, safety, environmental, quality and other relevant compliance standards required for participation in the offshore support supply chain.

Employment benefits associated with the Project are expected to be temporary and project-specific, proportionate to the limited duration of the exploration campaign. These benefits are anticipated to arise primarily through indirect economic effects associated with the procurement of goods and services and demand for support activities during the exploration period. They are not anticipated to result in structural changes to regional employment patterns.

All port and aviation activities will be conducted in accordance with applicable Hellenic Coast Guard and Civil Aviation Authority requirements.

#### 4.1.3.4 Knowledge and capacity building benefits

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Irrespective of the outcome of the exploration well, the Project will generate valuable geological, geophysical, environmental, and operational data that will enhance understanding of the Ionian Sea basin (Section 4.1.1). This information contributes to Greece's offshore knowledge base and supports future basin evaluation, marine spatial planning, and scientific research initiatives. The data-sharing initiative will specifically target biological and acoustic observations of cetacean populations in the Ionian Sea (see Chapter 8 – Environmental baseline status), contributing high-resolution scientific baseline data critical to the long-term conservation of the Hellenic Trench ecosystem.

In addition, the Project is being undertaken in the context of renewed offshore exploration activity in Greece, involving multiple international operators that employ contemporary offshore technologies, adhere to regulatory processes, and meet environmental management standards. This broader offshore activity contributes to knowledge accumulation and capacity building across national institutions, service providers, and regulatory bodies.

Exposure to a range of good international industry practices supports the continued development of:

- Offshore regulatory oversight and permitting processes.
- Environmental monitoring and impact assessment methodologies.
- Emergency preparedness and response planning.
- Port, aviation, and logistics capabilities supporting offshore operations.

The combination of Project-specific experience and broader offshore activity strengthens institutional learning and technical capacity within Greece, independent of exploration outcomes. This enhances the country's ability to manage offshore activities in a structured, transparent, and environmentally responsible manner over the long term.

## 4.2 Hydrocarbon exploration well projects - brief overview

Since 2009, Energean has established demonstrable offshore well operator credentials through the planning and execution of multiple offshore drilling campaigns with drillships and jack-up rigs in the North Aegean Sea, Eastern Mediterranean and North Africa. These campaigns covered exploration, appraisal, and development wells in shallow-water, deepwater, and ultra-deepwater environments, and were conducted in accordance with prevailing safety, environmental and regulatory standards. This operating track record provides a robust basis for the proposed Asopus-1 offshore exploration well in Block 2.

This experience demonstrates Energean's ability to plan, manage and execute offshore drilling activities safely and efficiently. Core competencies include drillship selection and contracting, well design, drilling operations, marine and aviation logistics, contractor coordination, regulatory engagement and post-well close-out.

### 4.2.1 Background - international experience in exploration well projects

Energean has conducted multiple offshore well operations with drillships across several jurisdictions, including four wells in Israel in 2019, six in 2022, two in 2026, and an appraisal well in Morocco in 2024.

Collectively, these activities demonstrate Energean's established experience in offshore operations with drillships, encompassing exploration, appraisal, and development wells, delivered with a consistent emphasis on safety, environmental management and regulatory compliance. This operating history supports the conclusion that the proposed Asopus-1 exploration well will be managed by an operator with proven deepwater offshore drilling capability.

#### 4.2.1.1 Operated offshore drilling experience - Israel

Energean has completed multiple offshore drilling campaigns in Israel, using modern drillships in deepwater environments under the oversight of the Israeli Ministry of Energy and Infrastructure. These campaigns represent the most directly relevant precedent for the Asopus-1 Project with respect to offshore operational complexity and regulatory requirements.

In 2019, Energean deployed the Stena DrillMAX drillship to drill three development wells and one exploration well, resulting in the discovery of the Karish North field. The campaign was completed safely and in full compliance with applicable regulatory and environmental requirements, demonstrating Energean's capabilities in offshore drilling operations, environmental management, marine logistics and contractor coordination in the Eastern Mediterranean.

In 2022, Energean executed a further offshore drilling campaign using the Stena IceMAX drillship. This six-well campaign comprised development, appraisal and exploration activities, including:

- one development well, involving the reentry, sidetrack and completion of the previously drilled Karish North well;
- one appraisal well (Karish Main-04);
- and four exploration wells across multiple license areas offshore Israel that resulted in the discovery of

the Katlan field.

The 2022 campaign required extended drillship mobilisation, coordination of multiple campaign objectives and engagement with several regulatory authorities. It was executed using Energean's established health, safety and environmental management systems, further demonstrating the company's ability to manage complex, multi-well offshore drilling campaigns safely and consistently across different license areas.

In 2026, Energean is conducting a two-well development drilling campaign offshore Israel as part of the Katlan field development, utilising the Saipem Santorini drillship, further reinforcing its ongoing operational presence and experience in the region.

Taken together, the 2019, 2022, and 2026 Israeli offshore drilling campaigns demonstrate Energean's consistent, operator-led offshore drilling capability, including the safe execution of development, appraisal and exploration wells using different drillships, and the effective management of environmental and safety risks in deepwater offshore settings.

#### 4.2.1.2 Operated offshore drilling experience – Morocco

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Energean has also acted as operator of offshore licences in Morocco, extending its offshore drilling activities into a different regulatory and operational environment. In 2024, Energean drilled one offshore appraisal well using the Stena Forth drillship. This activity demonstrates Energean's ability to safely mobilise and operate a drillship, manage offshore logistics and contractors, engage with regulatory authorities and execute drilling operations in accordance with approvals and international safety and environmental standards in a non-core jurisdiction.

#### 4.2.1.3 Operated offshore drilling experience – Greece

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Energean has a long operational history in Greece through the Prinos offshore development, located in the North Aegean Sea near Kavala. Activities have included offshore drilling operations, well interventions, logistics coordination, marine support, and environmental management. To date, Energean has drilled three wells and conducted seventeen well intervention campaigns at Prinos, maintaining an excellent HSE performance record in line with its HSE and environmental management systems and applicable Greek and EU regulatory requirements, while carrying out safe activities adjacent to areas with extensive tourist and fishing activity. This experience demonstrates familiarity with Greek and EU regulatory requirements, offshore operations in Greek waters, and the management of drilling, intervention, and associated environmental risks through established HSE and environmental management systems.

#### 4.2.1.4 Non-operated offshore exploration experience

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In addition to its operated activities, Energean has participated as a non-operating partner in offshore exploration wells led by international oil and gas companies. This includes participation in the Orion-1X offshore exploration well in Egypt, operated by a subsidiary partly owned by Eni, and involvement as a



joint-venture partner in the Isabella offshore exploration and appraisal programme in the UK Continental Shelf, operated by a TotalEnergies subsidiary.

Although Energean was not the designated operator for these wells, its role involved subsurface evaluation, well planning, drilling programme review, regulatory engagement and post-well technical assessment within established joint-venture governance structures. These activities complement Energean's operated drilling record by demonstrating offshore exploration experience both as an operator and an active technical partner.

## 4.2.2 Progress of exploration well projects in Europe

This section describes the regional and European context for offshore exploration activity relevant to the proposed Asopus-1 well. Oil and gas exploration in Europe during 2025–2026 remains limited, with drilling concentrated in a few jurisdictions and increasingly focused on natural gas. Exploration levels are low relative to historical trends and other global regions, reflecting basin maturity, regulatory and fiscal pressures, and policy frameworks that prioritise decarbonisation, as well as a broader shift by operators towards lower-risk, infrastructure-led projects (<https://www.iea.org/reports/world-energy-outlook-2024>).

Since 2022, European energy policy and market assessments have adjusted in response to increased energy security concerns and the need to reduce reliance on external gas supplies.

Disruptions in international energy markets have highlighted the importance of supply diversification and the development of domestic resources. Within this context, domestic oil and gas, particularly natural gas, are often treated in policy and industry assessments as transitional components for short- to medium-term supply security, alongside long-term commitments to emissions reduction and energy transition objectives ([https://commission.europa.eu/publications/repowereu-plan\\_en](https://commission.europa.eu/publications/repowereu-plan_en)).

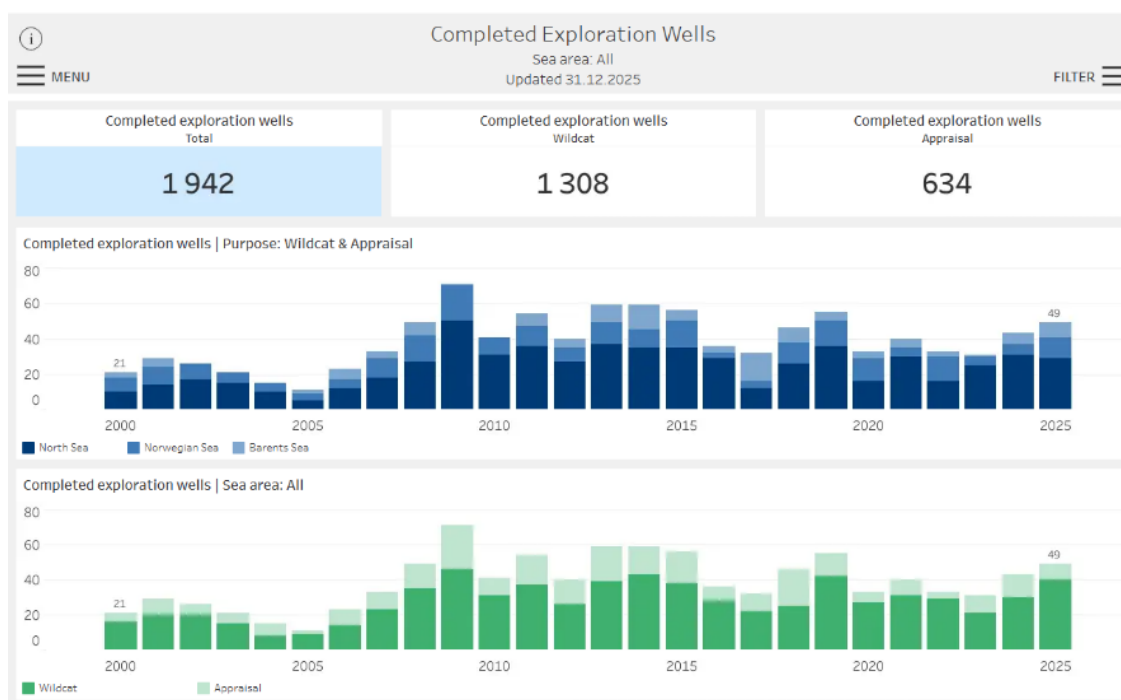
This evolving policy context has not resulted in a broad recovery in exploration activity across Europe. Instead, it has reinforced a selective investment environment, with capital directed toward gas-focused prospects, near-field opportunities, and projects capable of utilising existing or planned infrastructure. Industry analyses indicate a continued preference for incremental exploration and appraisal over frontier or basin-opening drilling, with project viability strongly influenced by environmental sensitivities, regulatory expectations, and access to infrastructure (<https://www.iea.org/reports/world-energy-outlook-2024>).

Norway remains the main centre of exploration activity in Europe and is the only jurisdiction where offshore exploration drilling continues at a sustained scale.

This position is supported by a stable fiscal regime, predictable licensing through annual APA (Awards in Predefined Areas) rounds, and extensive offshore infrastructure. According to the Norwegian Offshore Directorate<sup>9</sup>, 49 exploration wells were completed on the Norwegian continental shelf in 2025 (), with operators' plans indicating a slightly lower, but still relatively high, level of exploration drilling in 2026. Activity is dominated by gas-prone plays, near-field prospects, and subsea tie-back developments, with a smaller number of higher-risk frontier exploration wells in less mature offshore areas (<https://www.sodir.no/en/>).

<sup>9</sup> <https://www.sodir.no/en/facts/data-and-analyses/exploration-wells-statistics/>

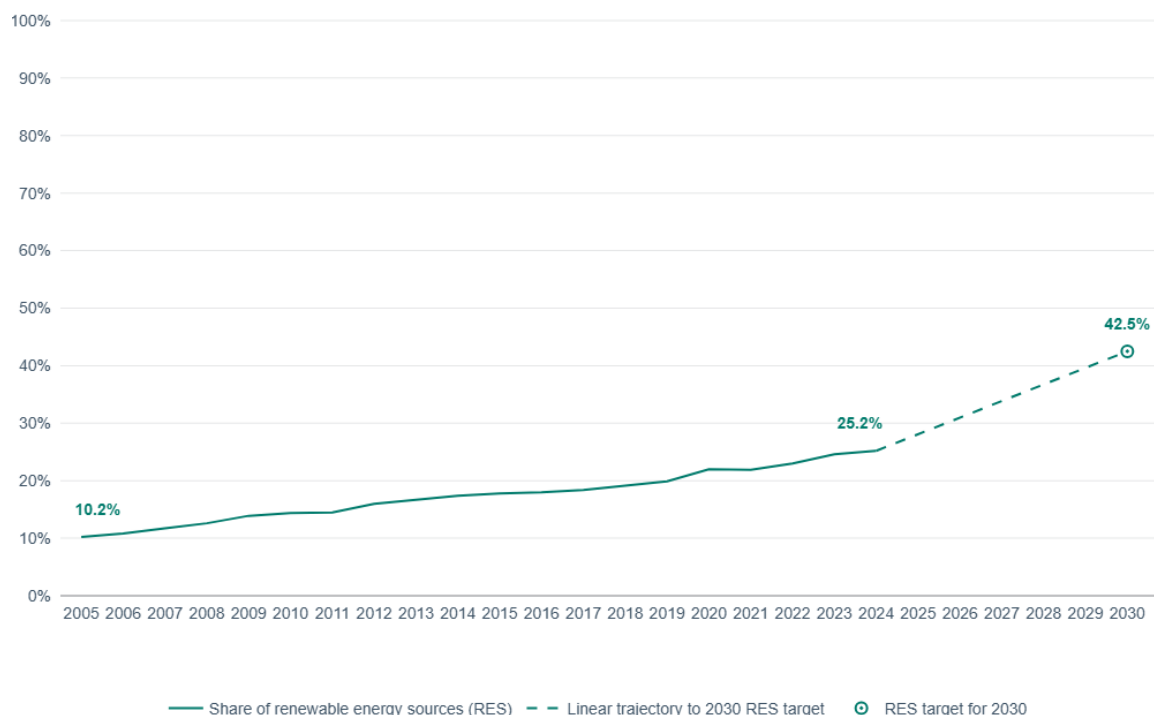
**Figure 4-1: Completed exploration wells on the Norwegian continental shelf since 2000 (Source: Norwegian Offshore Directorate)**



**Figure 4-1: Completed exploration wells on the Norwegian continental shelf since 2000 (Source: Norwegian Offshore Directorate)**

In contrast, exploration on the United Kingdom Continental Shelf has declined to historically low levels. Publicly available UK regulatory and industry data indicate that no new offshore exploration wells were spudded on the UK Continental Shelf in 2025, marking the first year in several decades without new exploration drilling. Remaining activity is largely limited to development and infrastructure-led opportunities, while upstream investment is at historically low levels and operator focus has shifted toward late-life asset management and decommissioning (<https://www.nstauthority.co.uk/>).

Across other European Union Member States, offshore exploration activity remains limited and geographically dispersed, reflecting basin maturity, increasingly stringent environmental and permitting requirements, and national policy choices turning towards renewable energy sources (Figure 4-2) (<https://www.eea.europa.eu/>). In north-western and central Europe, including the Netherlands, Denmark, and Germany, exploration is minimal and typically limited to small-scale, gas-focused opportunities tied to existing infrastructure in mature basins. In some cases, such as Denmark, policy decisions have resulted in restrictions on or prohibitions of new oil and gas exploration. In contrast, in other jurisdictions, onshore exploration is heavily restricted, and limited offshore gas-focused activity remains possible under strict environmental conditions.



**Figure 4-2: Progress towards renewable energy source targets for EU-27 (Source: Eurostat<sup>10</sup> & European Environment Agency (EEA)<sup>11</sup>)**

In southern European EU waters, offshore exploration drilling has continued on a highly selective basis under established regulatory frameworks and EU environmental legislation. This includes the Gemini-1 exploration well drilled by Eni in the Italian offshore sector of the Strait of Sicily, within Italy's Exclusive Economic Zone. Gemini-1 formed part of a broader, infrastructure-led exploration programme in the Ibleo area and was undertaken following an Environmental Impact Assessment carried out under Italian and EU legislation. The project is consistent with broader European patterns observed in recent offshore exploration, characterised by limited, gas-focused activity near existing infrastructure, with drilling results informing appraisal or development decisions subject to separate assessment and permitting (<https://www.eni.com/en-IT/media/press-release/2025/01/enilive-begins-saf-production-at-its-plant-in-gela.html>). Offshore

exploration and appraisal activity has also taken place in Cyprus, where projects are subject to EU environmental legislation and national permitting requirements; recent activity in Cypriot waters has largely transitioned from discovery drilling toward appraisal and development planning (<https://www.meci.gov.cy>).

Greece represents an emerging upstream province within this regional and European context. Following extensive seismic acquisition and interpretation, offshore areas in the Ionian Sea, including the north-western Ionian offshore area, as well as other Ionian concessions held by international and Greek joint ventures, have progressed through successive stages of technical evaluation and are, subject to regulatory

<sup>10</sup> [https://ec.europa.eu/eurostat/databrowser/view/NRG\\_IND\\_REN/default/table?lang=en](https://ec.europa.eu/eurostat/databrowser/view/NRG_IND_REN/default/table?lang=en)

<sup>11</sup> <https://www.eea.europa.eu/en/datahub/datahubitem-view/1fd08152-1371-4274-8091-b50467738376>

approval under Greek and EU law, approaching a stage at which exploration drilling may be considered. In parallel, offshore blocks south of Crete have been leased to consortia involving international oil companies and Greek partners, which are advancing multi-phase exploration programmes aimed at assessing deepwater gas potential (<https://www.hhrm.gr>).

In Eastern Europe, the Black Sea has become an important area for offshore gas exploration and development and is increasingly discussed in the context of European energy supply diversification. In Romania, offshore drilling continues as part of the Neptun Deep project, which includes multiple development wells and associated infrastructure, with additional drilling planned prior to first gas later in the decade that according to the Consilium Policy Advisors Group summary report<sup>12</sup> is expected to have significant economic impacts on the Romanian economy as presented in Figure 4-3.

Exploration and appraisal activity is also ongoing in Bulgaria's Han Asparuh licence area. In the Turkish sector of the Black Sea, offshore exploration and appraisal activity has continued following recent gas discoveries, with a current focus on development of known accumulations and optimisation of existing and planned infrastructure (<https://www.omvpetrom.com>, <https://www.me.government.bg>).

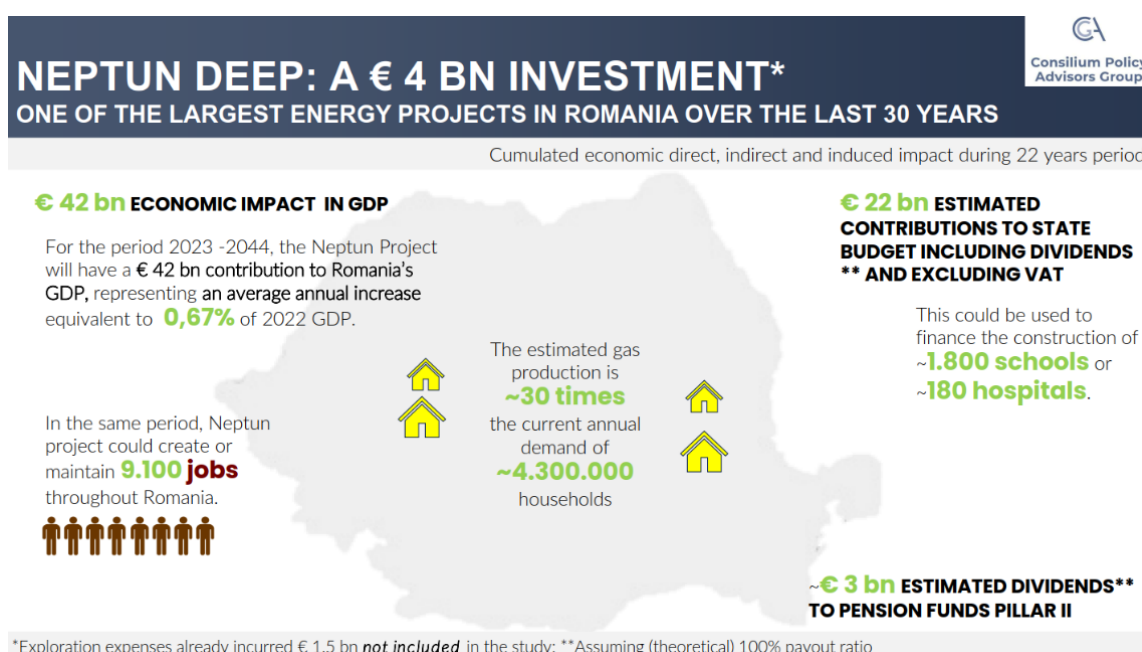


Figure 4-3: Neptune Deep expected economic impacts (Source: OMV Petrom website)

In the Eastern Mediterranean outside the European Union, offshore activity has largely evolved toward appraisal and development of existing gas discoveries. In Israel and Egypt, recent activity has focused on progressing discovered resources toward development, including offshore infrastructure planning and phased appraisal programmes (<https://www.iea.org/reports/gas-market-report-q2-2024>). These activities take place within complex regulatory, geopolitical, and environmental contexts and are subject to project-specific environmental assessment processes.

<sup>12</sup> <https://www.omvpetrom.com/downloads/2025/07/b8f93625-3b21-701a-660d-dd6e784f6427/CPAG%20impact%20study%20summary.pdf>

Overall, oil and gas exploration activity in Europe remains limited, selective, and unevenly distributed. Most current activity targets natural gas in proximity to established infrastructure and aligns with short- to medium-term energy supply considerations rather than indicating a broad resurgence in exploration investment. Within this regional context, the proposed Asopus-1 well represents a single, gas-focused offshore exploration activity in Greek waters, consistent with the selective and project-specific nature of contemporary European exploration, and subject to project-specific environmental assessment and permitting under Greek and EU law.

### 4.3 Project historical development

Energean became the operator of Block 2 in early 2021 and initiated a comprehensive technical review of the lease area, accompanied by preliminary environmental screening activities. The technical review utilised available legacy subsurface data, regional geological information, and interpretations developed under previous operatorship. In parallel, the review concluded that existing seismic coverage and subsurface data were insufficient to reliably assess the Block's prospectivity or to advance potential exploration targets with an adequate level of confidence.

During this review, Energean identified that the geological model previously applied to the area—particularly regarding the Jurassic reservoir development and structural configuration—was associated with a high degree of uncertainty and did not fully align with the established geological framework of western Greece. To address these uncertainties and reduce exploration risk, Energean determined that acquisition of new, high-resolution three-dimensional (3D) seismic data across the license area represented the most effective means of improving subsurface understanding.

Energean subsequently conducted a 3D seismic acquisition programme covering the full extent of Block 2, implemented in accordance with environmental protection measures defined in the license conditions and agreed with the Competent Authority. In parallel, regional data integration incorporated available well data, outcrop studies, and published academic research from western Greece and the central and southern Mediterranean region. This work was undertaken to develop a revised geological model that more accurately reflects regional stratigraphy, structural style, and petroleum system elements in both onshore and offshore settings.

Interpretation of the newly acquired 3D seismic dataset confirmed the presence of a well-defined four-way structural closure at Jurassic level, subsequently named the Asopus prospect. The updated geological and structural model is internally consistent and shows good correlation with surface geological observations, regional well data, and seismic sequence stratigraphy calibrated to outcrop information. The improved data quality and integrated interpretation significantly increased confidence in the subsurface model relative to earlier datasets and interpretations.

Following completion of detailed technical evaluations, including geological interpretation, outcrop and analogue studies, seismic analysis, and petroleum system assessment, Energean and its co-venturers concluded that the Asopus prospect represents the most mature and technically robust candidate for exploratory drilling during the current exploration phase. In addition to the primary Jurassic objective, the updated interpretation identified a secondary, shallower target at Top Cretaceous level, which may also be tested within the same exploration well.

The environmental suitability of the proposed drilling location was evaluated through environmental baseline studies (EBS) and shallow hazard analyses, which did not identify environmental constraints that would preclude drilling, subject to implementation of the mitigation measures described in this ESIA.

On this basis, Energean advanced planning for a single vertical offshore exploration well, Asopus-1, designed to evaluate both the primary Jurassic and secondary Cretaceous targets. The proposed well represents the next step in the phased exploration strategy for Block 2. Results from drilling will be used to refine the geological model and inform any future appraisal or exploration decisions, which would be subject to separate technical evaluations, environmental assessments, and regulatory approvals. This ESIA addresses the environmental assessment of the Asopus-1 drilling operation only; any subsequent appraisal or development activities would be subject to separate environmental assessment and permitting in accordance with Greek and EU law.

#### 4.4 Economic valuation of GHG emissions

Greenhouse gas emissions for the 67-day campaign are estimated in detail in Section 6.11 of this ESIA (Carbon Footprint). This approximate quantity is 15.6 kt CO<sub>2</sub>e. This represents approximately 0.02% of Greece's 2022 annual GHG emissions<sup>13</sup> and is therefore assessed in this ESIA as not significant in the context of Greece's reported annual greenhouse gas emissions, based on the applied significance criteria. At the regional scale, the temporary emissions from the 67-day campaign represent a very small contribution relative to baseline emissions from shipping and offshore activity in the Ionian Sea.

Overall, the campaign's temporary duration, offshore location, and absence of planned venting or flaring mean that atmospheric emissions are short-term and operational in nature. Management measures will focus on fuel consumption, engine efficiency, logistics optimisation, compliance with MARPOL Annex VI fuel sulphur requirements, and the identification and reporting of any methane releases that may arise from in-scope exploration activities.

An indicative economic valuation of greenhouse gas (GHG) emissions has been undertaken to provide context for the potential climate-related costs associated with the drilling Project's activities. A representative carbon price has been applied using European Union Allowance (EUA) futures pricing, specifically the Intercontinental Exchange (ICE) EUA contract for March 2027, at €77.4 per tonne CO<sub>2</sub>e. EUA futures pricing is used here as an illustrative proxy for traded carbon, not as a substitute for jurisdiction-specific appraisal carbon values.

This carbon price is used as a proxy for the notional market-based value of carbon emissions, reflecting prevailing market-based valuation under the EU Emissions Trading System (EU ETS). It is for illustrative purposes only and does not represent a confirmed regulatory cost applicable to the Project.

Applying this unit value to the Project's estimated emissions results in an indicative carbon cost of approximately €1.21 million for the 67-day drilling campaign.

<sup>13</sup> According to the National Energy and Climate Plan, August 2024, GHG emissions in Greece in 2022 were 76.9 Mt (taking into account also carbon emissions and removals in the land use, land use change and forestry (LULUCF) sector).

This economic valuation is methodologically conservative, only in the sense that it applies a full traded carbon value to all conservatively estimated campaign GHG emissions, irrespective of their actual inclusion within carbon pricing mechanisms. In practice, the extent to which emissions from offshore drilling units, marine support vessels and aviation activities fall within the scope of EU ETS or other carbon pricing mechanisms depends on factors such as vessel classification, operational profile, and regulatory applicability under EU and Greek law at the time of operation.

The resulting monetised value is therefore intended as a contextual indicator of the potential climate-related cost of emissions, rather than a direct estimate of financial liability.

In this context, the estimated carbon value is modest relative to the overall scale of offshore exploration expenditure. This is consistent with current practice in EU EIA/ESIA procedures, where monetisation of GHG emissions is used as supporting contextual information and does not by itself determine significance.

## 4.5 Financial elements

The indicative total cost of the Asopus-1 exploration well is approximately USD 80 million (nominal), based on the phase-by-phase allocations presented in Table 4-1. The estimate is intended solely to indicate the potential financial scale of the proposed exploration activity for ESIA purposes and should not be interpreted as a final Authorisation for Expenditure or investment decision.

**Table 4-1: Indicative Exploration Drilling Cost Breakdown**

| COST CATEGORY         | PLANNING        | MOBILISATION   | EXPLORATION DRILLING OPERATIONS | P&A OPERATIONS | DEMobilISATION |
|-----------------------|-----------------|----------------|---------------------------------|----------------|----------------|
| Engineering & Studies | \$12.6mm        | \$0.1mm        | \$2.4mm                         | \$0.3mm        | \$1.3mm        |
| Materials             | \$0.5mm         | \$0.3mm        | \$4.0mm                         | \$0.3mm        | \$0.0mm        |
| Rig                   | -               | \$1.0mm        | \$24.0mm                        | \$2.7mm        | \$1.3mm        |
| Logistics Services    | \$2.8mm         | \$0.8mm        | \$9.4mm                         | \$1.1mm        | \$2.1mm        |
| Other Services        | \$1.2mm         | \$1.8mm        | \$7.7mm                         | \$0.5mm        | \$1.8mm        |
| <b>Total</b>          | <b>\$17.1mm</b> | <b>\$3.9mm</b> | <b>\$47.5mm</b>                 | <b>\$4.8mm</b> | <b>\$6.5mm</b> |

The estimate assumes a total offshore campaign duration of approximately 67 days, including mobilisation, drilling and evaluation of the exploration well, plug and abandonment activities as applicable, demobilisation of the drilling unit, and associated support spread, and the operation and closure of a temporary onshore logistics base.

For the purposes of this assessment, the estimate is based on a conservative upper-bound scenario, under which hydrocarbons of potential commercial interest are encountered. This scenario represents the maximum credible cost outcome for the exploration campaign and is used solely as a planning assumption for the ESIA context; it does not imply that a commercial discovery is expected or forecast.

The estimate is further based on the following key assumptions:

- all required permits, consents and regulatory approvals are obtained in time to support a planned spud date in February 2027;



- the Stena DrillMAX drilling unit is available and drills the well as currently planned;
- no significant non-productive time arises from major contractor or downhole downtime; and
- weather and metocean conditions remain within the normal operating range for the planned campaign and do not result in significant delays;
- the logistics and support strategy are implemented as currently planned, including the use of an established onshore supply base at the Port of Igoumenitsa and helicopter support operations based in Corfu (CFU), subject to final permitting and operational arrangements.

Actual project costs may vary from those presented depending on final well design, operational performance, rig, and marine spread market conditions, weather-related downtime and the final well outcome. If no hydrocarbons of commercial interest are encountered and the well is permanently abandoned immediately following drilling, the total cost would be lower than the conservative upper-bound estimate presented here.

## 4.6 Relation with other projects/activities

### 4.6.1 Operational, planned, and proposed projects within the Adriatic–Ionian corridor

The Asopus-1 exploration drilling programme is located within the wider Adriatic–Ionian marine energy and infrastructure corridor, where several existing, planned, and proposed projects contribute to an increasingly multi-use offshore environment. Potential spatial or functional interfaces with the Asopus-1 activities are briefly examined.

The Trans Adriatic Pipeline (TAP) natural gas transmission system is an operational component of the Southern Gas Corridor, transporting gas from the Caspian region to Europe via Greece, Albania, and Italy. The offshore component consists of a subsea crossing of the Adriatic Sea connecting Greece with Italy. TAP is a permanently installed, in-service energy transport asset with established safety zones and exclusion areas along its route (<https://www.tap-ag.com/infrastructure-operation/tap-route-and-infrastructure>).

No physical overlap exists between TAP infrastructure and the Asopus-1 Block 2 drilling location; however, both projects form part of the broader regional offshore energy system, and interaction is limited to general marine spatial use considerations (e.g. navigation routing and maritime planning interfaces).

The TERNA S.p.A. / IPTO promoted GR.ITA 2 project is a planned high-voltage direct current (HVDC) electricity interconnection between Greece and Italy. The project comprises a subsea cable system of approximately 240 km within a total route length of around 300 km, designed to enhance cross-border electricity exchange capacity and support EU decarbonisation objectives. The project is currently in the planning and development phase, with routing corridors and permitting processes subject to ongoing definition (<https://www.terna.it/en/projects/public-engagement/italy-greece-grita-2>).

While the cable alignment is not fixed at the level of operational detail required for direct assessment overlap, it represents a foreseeable marine infrastructure corridor within the wider Ionian Sea region. Any interaction with Asopus-1 is therefore limited to potential temporal coexistence of offshore works and general marine spatial coordination, rather than direct physical interference.

The IGI Poseidon S.A. EastMed–Poseidon concept comprises a proposed offshore and onshore gas transmission network intended to transport natural gas from Eastern Mediterranean resources to European markets via Greece and Italy. The system includes the EastMed offshore pipeline concept and the Poseidon interconnection segment between Greece and Italy (<https://igi-poseidon.com/eastmed-poseidon/>).

EastMed–Poseidon projects remain at a conceptual or strategic planning stage, with technical configuration, routing, and investment decisions not finalised. As such, there is no committed spatial interface with Asopus-1; any potential interaction is limited to high-level marine spatial planning considerations in the event of future project advancement.

#### 4.6.2 Sectoral upstream activities – Ionian offshore exploration

Published data from the Hellenic Hydrocarbons and Energy Resources Management Company (HEREMA / ΕΔΕΥΕΠ) confirm that offshore hydrocarbon exploration in Greece is currently concentrated in a limited number of active concessions, with a clear geographic clustering in the Ionian Sea and offshore Crete. These include Block 2, Block 10, the Ionian Block, Block A2, and the South Peloponnese concession, alongside four offshore blocks south and southwest of Crete, all of which are in exploration or early appraisal phases.

In the Ionian Sea, Block 2 and Block 10 represent the most advanced exploration areas, with ongoing seismic interpretation and preparation for potential exploration drilling activities, particularly in deeper offshore settings west of Corfu and along the Greek–Italian maritime boundary. These concessions involve international operators and joint ventures and include phased work programmes comprising 2D/3D seismic acquisition, geological modelling, and environmental baseline studies.

Collectively, these offshore concessions define the current sectoral upstream footprint in western Greek waters, and form the principal reference projects for cumulative assessment in relation to the Asopus-1 exploration well. Potential overlapping activities include:

- Marine geophysical surveys (2D/3D seismic acquisition and interpretation),
- Exploration drilling operations (where authorised under later phases),
- Offshore supply vessel movements and marine logistics support,
- Helicopter operations associated with crew changes and emergency response,
- Temporary installation of safety and exclusion zones during drilling campaigns.

The spatial interaction between concessions is generally limited by licensing boundaries and operational scheduling; however, temporal overlap of exploration campaigns across adjacent blocks may occur during peak operational periods. In particular, Block 2 (northwestern Ionian) and Block 10 (central Ionian) represent the most relevant potential cumulative activity sources due to their geographic proximity and similar development timelines.

The Asopus-1 well is therefore assessed within a broader regional upstream context characterised by low-density, phased and campaign-based exploration activity, rather than continuous industrial-scale offshore production. This reflects the early-stage nature of hydrocarbon exploration in Greek offshore basins and the absence of established offshore production infrastructure in the Ionian Sea.

Across all identified projects, no direct physical interaction or dependency is expected with the Asopus-1 drilling programme, based on current project definitions and available routing information. Interaction is limited to shared use of the wider marine environment, including established shipping routes, aviation corridors, and offshore operational space within the Ionian Sea. The Asopus-1 activity is a short-term, campaign-based operation within Block 2 and does not require or rely upon existing or planned infrastructure corridors.

## 5 Project compatibility with the existing regulatory provisions

### 5.1 Environmental permitting framework

#### 5.1.1 Concession (lease agreement)

“Block 2” was initially awarded to a joint venture comprising Total, Edison, and Hellenic Petroleum. The relevant Lease Agreement was executed with the Hellenic Republic on 31 October 2017 and subsequently ratified by Law 4525/2018 (GG A' 47 / 15.03.2018) *Ratification of the Lease Agreement between the Hellenic Republic and the companies “Total E&P Greece B.V.”, “Edison International S.p.A.” and “Hellenic Petroleum SA” for the granting of the authorization for the exploration and exploitation of hydrocarbons in the maritime Area 2, Ionian Sea, granting exclusive rights for the exploration and production of hydrocarbons within the concession area.*

Subsequent amendments to the joint venture composition, documentation of which is presented in Table 5-1 below, resulted in a revised partnership structure. Specifically, following the consent of the Minister of Environment and Energy granted under Ministerial Decision ΥΠΕΝ/ΔΥΔΡ/27224/552/10.03.2026, Energean holds 30% of the relevant rights, while the companies “ExxonMobil Exploration and Production Greece (Crete) B.V.” (“ExxonMobil”) and “Helleniq Upstream West Corfu Single-Member SA” (“Helleniq”) hold 60% and 10% of the relevant rights respectively (collectively, Energean, ExxonMobil, and Helleniq are referred to as the “Co-lessees”).

Table 5-1: Joint venture composition development

| LAW/DECISION AND RELEVANT REGULATORY DOCUMENTS | SUBJECT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>MD ΥΠΕΝ/ΥΠΡΓ/59418/8659/10.9.2018</b>       | Consent for the transfer of the entire participating interest (25%) of the company “Hellenic Petroleum SA” in the Lease Agreement, to the company named “Hellenic Petroleum Exploration and Production of Hydrocarbons West Corfu SA”, operating under the trade name “ELPE West Corfu.”                                                                                                                                                                                                                |
| <b>MD ΥΠΕΝ/ΔΥΔΡ/93837/2284/30.9.2020</b>       | Consent for:<br>(a) the transfer of the participating interest of the company “Edison International S.p.A.” in the Lease Agreement to its affiliated company “Edison International E & P S.p.A.”, and<br>(b) the transfer of the participating interest of “Edison Exploration & Production S.p.A.”, an affiliated company of “Edison International E & P S.p.A.”, as well as the change of control of the latter company within the above Lease Agreement, subject to the completion of condition (a). |
| <b>MD ΥΠΕΝ/ΔΥΔΡ/114254/2781/30.11.2020</b>     | Consent for the transfer of a 50% participating interest, together with the corresponding rights and obligations under the Lease Agreement, from “Total E & P Greece B.V.” to “Energean Hellas Ltd”.                                                                                                                                                                                                                                                                                                    |

| LAW/DECISION AND RELEVANT REGULATORY DOCUMENTS                                                                         | SUBJECT                                                                                                                                                                                                                                                                                                |
|------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Decision of the Hellenic Hydrocarbon Resources Management Company (HHRM), reference number ΕΔΕΥ 8522/01.12.2020</b> | Consent for the change of Operator under the Lease Agreement, from the company “Total E & P Greece B.V.” to the company “Energean Hellas Ltd.”                                                                                                                                                         |
| <b>ΜΔ ΥΠΕΝ/ΔΥΔΡ/119755/3274/14.12.2021</b>                                                                             | Approval for the transfer of a 25% participating interest, together with the corresponding rights and obligations under the Lease Agreement, from “Energean International E & P S.p.A.” to “Energean Hellas Ltd”, as a transfer to an affiliated company pursuant to Article 20.1(c) of Law 4525/2018. |

In November 2025, ExxonMobil announced, during the Partnership for Transatlantic Energy Cooperation held in Athens, the execution of a farm-in agreement with the Energean – HELLENiQ ENERGY joint venture. ExxonMobil formally assumed the role of co-lessee on 10 March 2026, following the issuance of the Ministerial Decision approving the transfer of participating interests.

Upon completion of the minimum obligations under the initial exploration phase and following a positive technical evaluation of the area, the Co-lessees submitted, on 13 March 2026, formal notification of their intention to proceed to the second exploration phase, one day prior to the expiry of the first phase.

The second exploration phase entails, inter alia, the drilling of one exploration well, in accordance with the approved Minimum Work Programme as reflected in Table 5-2

Law 4525/2018 ratifies the Lease Agreement for offshore Block 2 in the Ionian Sea between the Hellenic Republic and a consortium originally composed of Total, Edison, and Hellenic Petroleum, granting it full force of law in Greece. The agreement provides exclusive rights for the exploration and potential production of hydrocarbons within the defined offshore block and establishes a phased exploration framework governed by a binding Minimum Work Programme. It sets out the applicable fiscal regime, including royalties, taxation, and potential state revenue mechanisms in the event of commercial discovery, while also embedding strict environmental obligations consistent with EU and national legislation, including requirements for environmental impact assessment and decommissioning.

More specifically, Law 4525/2018 is the Greek legislative act that ratifies and gives full legal force to the offshore hydrocarbons Lease Agreement for “Block 2” in the Ionian Sea, effectively transforming a negotiated concession contract between the Greek State and the consortium of companies into binding national law. Through this ratification, Parliament approves the transfer of exclusive rights for the phased exploration and potential exploitation of hydrocarbons within the Block 2 offshore area, while maintaining the fundamental principle that all subsurface resources remain State property. The law establishes a structured, phase-based exploration system requiring geological studies, seismic surveys, and potential exploration drilling, with strict deadlines and performance obligations, and provides that any transition to production is conditional upon commercial discovery and State approval of development plans. Importantly, it also embeds a stringent control mechanism whereby any transfer of participating interests, change of operatorship, or alteration of the consortium structure requires prior State consent, ensuring continuous regulatory oversight. In addition, it integrates the concession into the broader EU-aligned environmental and energy regulatory framework, including compliance with environmental impact assessment requirements, while placing implementation and supervision under the competent national hydrocarbons’ authority.

Table 5-2 below, presents the Lessee's work commitments during the exploration phase as described within the agreement.

**Table 5-2: Lessee's exploration work commitments as per the Lease Agreement ratified by Law 4525/2018 (Minimum Work Programme).**

| MINIMUM WORKS                 | PHASE 1<br>YEAR 1 TO YEAR 3                                         | PHASE 2<br>YEAR 4 TO YEAR 5                                              | PHASE 3<br>YEAR 6 TO YEAR 8                                |
|-------------------------------|---------------------------------------------------------------------|--------------------------------------------------------------------------|------------------------------------------------------------|
| <b>Firm activities</b>        |                                                                     |                                                                          |                                                            |
| Seismic acquisition           | Acquisition & Processing of 1,800 km 2D seismic data                | Re-evaluation of seismic data                                            | Re-evaluation of seismic data                              |
| Re-evaluation of seismic data | Magnetic & gravity survey (if possible, during seismic acquisition) | -                                                                        | -                                                          |
| Drilling                      | -                                                                   | One well                                                                 | One well                                                   |
| G&G                           | Geological studies, basin analysis                                  | Petrophysical and Geochemical analysis etc                               | Re-evaluation of G&G data                                  |
| HSE                           | Baseline report I, Environmental Action Plan (EAP), etc             | Baseline report II, Environmental Impact Assessment (EIA)                | Baseline report III, Environmental Impact Assessment (EIA) |
| <b>Contingent work</b>        |                                                                     |                                                                          |                                                            |
| Seismic acquisition           | -                                                                   | Acquisition of 3D seismic data (extent depending on 2D and well results) | -                                                          |

**Note:** The proposed Asopus-1 exploration well constitutes the Phase 2 drilling commitment under the Minimum Work Programme of the Lease Agreement, ratified by Law 4525/2018.

The law further defines governance and oversight provisions, requiring state approval for any transfer of participating interests and ensuring regulatory supervision throughout the lifecycle of the project. Dispute resolution and termination provisions are included under Greek law and international arbitration principles. Overall, the ratification law establishes the complete legal, fiscal, and environmental framework governing offshore exploration in Block 2 and enables long-term upstream energy activity under state-controlled regulatory oversight.

Article 12 of Law 4525/2018 states the reference terms and conditions concerning the environmental protection measures to be followed during the execution of the exploration program:

*12.1 All terms in this Article 12 will be considered according to the legislation in force, unless otherwise provided herein.*

*12.2 The Lessee shall:*

- a) conduct all Petroleum Operations in a manner which will ensure the protection of environment in accordance with Good Oilfield Practices;
- b) carry out all Petroleum Operations in full compliance with:
  - i. Environmental Laws;
  - ii. the Law on Offshore Safety;
  - iii. the approved Strategic Environmental Assessment (SEA);

- iv. the Terms of Environment (ToE) resulting from the relevant Environmental Impact Assessment (EIA) procedure; and
- v. any additional Environmental Action Plan (EAP), pursuant to this Article and Good Oilfield Practices, while ensuring that such operations are properly monitored;
- c) employ modern and appropriate techniques in accordance with Good Oilfield Practices, for preventing any environmental damage that might be caused by the Petroleum Operations, and for minimizing the environmental impacts of the Petroleum Operations and works within the Contract Area and in adjoining or neighbouring or more distant areas;
- d) properly and timely implement any Laws in force regarding the safety of Hydrocarbons exploration and production activities during the period of Petroleum Operations;
- e) procure that the documentation on environmental compliance in conducting Petroleum Operations, such as SEA, ToE or EAPs and associated documents are made available to its employees and to its contractors and their subcontractors to develop adequate and proper awareness of the measures and methods of environmental protection to be used in conducting Petroleum Operations; and
- f) ensure that any agreement between the Lessee and its contractors and their sub-contractors relating to the Petroleum Operations shall include the terms as set out in this Article 12 and any established measures and methods for the implementation of the Lessee's obligations in relation to the environment under this Agreement.

*12.3 The Lessee undertakes for the purposes of this Agreement to take all necessary and adequate steps:*

- to fully and timely fulfil all requirements of applicable Environmental Laws; and
- to prevent environmental damage to the Contract Area and neighbouring or more distant areas being caused by Petroleum Operations.

*12.4 If the Lessor has on reasonable grounds reason to believe that any works or installations erected by the Lessee or any operations carried out by the Lessee are endangering or may endanger persons or any property of any other person or are causing pollution or are harming wildlife or the environment to a degree which the Lessor deems unacceptable, the Lessee may take remedial measures within such period as may be determined by the Lessor and may repair any damage to the environment, the costs of such remedial action to be borne by the Lessee. If the Lessor deems it necessary, it may require the Lessee to discontinue Petroleum Operations in whole or in part until the Lessee has taken such remedial measures or has repaired any damage.*

*12.5 The measures and methods to be applied by the Lessee for purposes of complying with the terms of this Article 12 shall be determined in timely consultation and agreed with the Lessor prior to the commencement of the relevant Petroleum Operations, and whenever there is a significant change in the scope or method of carrying out Petroleum Operations, and the Lessee shall take into account Good Oilfield Practices as well as the relevant requirements of the ToE.*

*12.6 Pursuant to the above 12.2(a) provision, the Lessee shall prepare and submit to the competent governmental authority, an Environmental Impact Study (EIS) for the relevant Petroleum Operations in respect of which an EIA procedure is required. The EIS shall, as a minimum:*

- a) fully comply with the requirements of the EIA legislation in force;
- b) meet the requirements and guidelines set out by SEA; and



- c) be prepared by a third party with adequate expertise in the field of environmental studies, which will be appointed by the Lessee to work on its behalf

12.7 Each project, work, activity or any other part of the Petroleum Operations that is subject to an EIA, shall commence only after the ToE has been approved.

12.8 Any modification, expansion, improvement or modernization of a project, work, activity or any other part of the Petroleum Operations with approved ToE, requires compliance with the relevant provisions of EIA legislation. The same applies for the renewal (time extension) of the ToE decision.

12.9 In case of activities for which an EIA is not mandatory but nevertheless it is reasonably expected that some minor environmental impacts may occur, as in particular for the case of seismic surveys, the Lessee shall prepare an EAP, to determine, assess and mitigate these impacts, focusing on prevention and minimization thereof in accordance with Good Oilfield Practices.

12.10 The EAP shall be submitted to the Lessor for review and must be complied with by the Lessee.

12.11 The Lessee shall include in each Annual Work Programme and Budget to be submitted to the Lessor, an environmental report on the work to be undertaken as provided in that document, as well as on the work undertaken in accordance with the preceding Annual Work Programme and Budget.

12.12 Before carrying out any drilling activities, the Lessee shall fully meet the requirements of the applicable legislation for safety, contingency (i.e. oil spill, fire, accident, emissions etc.) and major hazard management plans.

12.13 In the event of any emergency or accident arising from Petroleum Operations affecting the environment, the Lessee shall immediately notify the Lessor, giving details of the incident and immediately implement the relevant contingency plan. In dealing with any emergency or accident affecting the environment, the Lessee shall at all times take such action as is prudent and necessary in accordance with the Environmental Laws and Good Oilfield Practices in the circumstances.

12.14 The Lessee shall not be liable for any environmental condition or damage existing in the Contract Area prior to the commencement of the Lessee's operation therein and nothing in this Agreement shall be construed to hold the Lessee liable in relation to any such pre-existing condition of damage. For this purpose, a baseline report shall be prepared by the Lessee, to detail the condition of the environmental parameters and resources at the time prior to operation commencement. The baseline report shall be submitted for review to the Lessor. If no objections will rise by the latter within twenty (20) Business Days, the report is deemed accepted.

## 5.1.2 Strategic Environmental Impact Assessment (SEA) for the offshore hydrocarbon exploration & exploitation areas in the Ionian Sea

Greece implements the Strategic Environmental Assessment (SEA) Directive 2001/42/EC primarily through JMD 107017/2006 "Approval of the Strategic Environmental Assessment (SEA) procedure for plans and programmes, in compliance with Directive 2001/42/EC", which establishes a mandatory framework for the environmental assessment of plans and programmes prior to their formal adoption. Under this system, any strategic instrument—such as sectoral policies, spatial planning frameworks, or energy and infrastructure programmes—must undergo an ex-ante evaluation of likely significant environmental effects, including the

analysis of reasonable alternatives and the “no action” scenario. The SEA process requires the preparation of an Environmental Report, followed by public consultation and, where applicable, transboundary consultation in line with international obligations, with environmental authorities required to ensure that mitigation measures are integrated, and that implementation is subsequently monitored. Importantly, the SEA establishes binding environmental constraints and conditions that must be carried forward into subsequent project-level Environmental Impact Assessments (EIA), effectively setting the parameters, assumptions, and mitigation requirements that any EIA must comply with and operationalize. In practice, this ensures that environmental considerations are embedded at the strategic planning stage while also cascading into the design and approval of individual projects assessed under Directive 2011/92/EU, such as offshore exploration or development activities.

According to the Strategic Environmental Assessment (SEA) that was conducted in order to cover the wider area of the Ionian Sea (HCMR, 2016) and its respective approval (DIPA, ref. no. 30373/3.7.2017), the overall environmental framework to govern the E&P workstreams for the O&G offshore blocks (1 to 11).

Moreover, chapter B of the approved Strategic Environmental Assessment study states the terms, constraints and guidelines for environmental protection and management as follows:

*9. Prior to the commencement of exploratory drilling, and sufficiently in advance for the findings to be taken into account in the relevant Environmental Impact Assessment (EIA), detailed geohazard studies shall be prepared for the area of influence of each drilling operation. These studies shall analyze, at a minimum:*

- 9.1. The stability of slopes and the likelihood of landslides.*
- 9.2. The presence of gas pockets or gas-filled craters that could release gas.*
- 9.3. The presence of mud volcanoes and the level of risk they pose.*
- 9.4. The presence of unstable gas hydrates and the extent of their occurrence.*
- 9.5. The presence of active seismogenic faults in the area.*

*10. In order to prevent, to the maximum extent practicable, accidents that could have an impact on the environment, all drilling activities and their associated operations, whether conducted for exploratory or production purposes, shall be designed from the outset to ensure full compliance with Law 4409/2016 (Government Gazette A' 136), which establishes the framework for safety in offshore oil and gas exploration and exploitation operations by transposing Directive 2013/30/EU and amending Presidential Decree 148/2009. The findings of the above-mentioned geohazard studies shall be taken into account in the Major Hazard Reports required under the provisions of the above law.*

*11. In addition to the risks associated with the nature of drilling operations, and with a view to preventing accidents with potential environmental impacts, the Major Hazard Report required under Law 4409/2016 shall ensure that the safety assessment for each drilling operation takes into account the high seismic activity that characterizes the area, as well as the specific characteristics of the marine environment and its dynamics. With regard to these two aspects, safety factors shall be maximized by applying approaches, methods, and technical solutions that have been successfully implemented in comparable cases, addressing at least the following issues:*

11.1. Adoption of design assumptions that provide an adequate safety margin beyond the maximum anticipated duration of the entire project lifecycle, including construction, operation, decommissioning, and site restoration.

11.2. Selection of methods and materials that are suitable for use under conditions of high seismic activity.

11.3. Protection of equipment against the maximum expected wave conditions and the most severe foreseeable storm and rough sea events.

11.4. Preparation and immediate availability of detailed computational spill-dispersion models for use in the event of an oil spill, in order to enable a prompt and effective response.

12. Within the framework established by the above safety requirements, the selection of the drilling location, particularly where alternative locations are available, shall also take into account environmental considerations based on the following parameters and criteria:

12.1. Avoidance of locations that fall within, or are in the immediate vicinity of, the Register of Protected Areas established under the applicable River Basin Management Plans (RBMPs) for the areas covered by the program.

12.2. Consideration of the relationship between the proposed drilling location and previous drilling operations, with the objective of avoiding cumulative or systematic impacts on marine ecosystems.

12.3. Assessment of the environmental sensitivity of the immediate vicinity of the proposed drilling location, taking into account the ecological significance of the directly affected water column and benthic biological community, as well as the proximity of the location to protected areas. A specific assessment shall be carried out for seabed ecosystems (whether based on photosynthesis or chemosynthesis), including the potential presence of corals or other significant or sensitive ecological features.

12.4. Identification of significant elements of cultural heritage or technological infrastructure, such as archaeological remains, shipwrecks, submarine cables, and similar features, taking into account the thematic maps referred to in Condition 7.1\* and following a detailed visual inspection of the seabed, with the objective of avoiding adverse impacts on these features.

12.5. Consideration of human marine activities, such as aquaculture, fisheries, navigation, and tourism, with the objective of minimizing impacts on those activities.

13. During the design of the drilling operation, and in addition to compliance with the safety requirements of Law 4409/2016, detailed provision shall also be made to ensure compliance with the following environmental protection requirements:

13.1. The design shall incorporate appropriate technical solutions and management measures to ensure, in the following order of priority:

- resistance to any pressures or other forces that may be exerted during drilling, to prevent, to the maximum extent practicable, any accident with potential environmental consequences;

- inspections of sufficient scope and frequency to verify the proper operation of all safety systems, particularly critical systems such as the blowout preventer (BOP), the choke manifold, and other essential well-control equipment;
- provision of appropriate systems and emergency response plans for incidents such as the release of hydrogen sulfide (H<sub>2</sub>S) and other emergency situations;
- facilities and procedures for the collection of drilling wastes to enable their pre-treatment (e.g. separation processes) and their appropriate management and disposal, according to their nature and the degree of contamination by toxic, hazardous, or environmentally harmful substances;
- limitation, wherever technically feasible, of the dimensions of the initial riserless drilling phase to the minimum necessary.

*13.2. The drilling mud (drilling fluid) used throughout all phases of drilling shall, as a matter of priority, be water-based and shall not contain substances listed in Annexes I and II of the Protocol of the Barcelona Convention for the Protection of the Mediterranean Sea against Pollution Resulting from Exploration and Exploitation of the Continental Shelf and the Seabed and its Subsoil, which identify substances that are either prohibited or require special treatment prior to disposal. Oil-based drilling mud may be used only where its complete recovery is ensured and any possibility of pollution is prevented.*

*13.3. Preparedness for responding to pollution incidents shall be comprehensive and maintained at all times, at a minimum through:*

- preparation and approval of the appropriate contingency plans required under the applicable legislation;
- maintaining on site, and in a state of immediate operational readiness, all equipment required under the above-mentioned plans;
- scheduling emergency response exercises at a frequency and with an organization sufficient to ensure the effective response of personnel to pollution incidents.

*13.4. Well testing involving flaring shall employ high-efficiency flare burners equipped with systems designed to minimize atmospheric pollutant emissions.*

*13.5. The disposal of drill cuttings (the material removed from the seabed by the drill) shall comply with the applicable legislation governing waste management and the protection of the Mediterranean Sea. As a priority, the cuttings shall be transported and managed at appropriately licensed waste management facilities. Where it is demonstrated that the cuttings consist exclusively of inert materials, are free from contaminants, and that transport to such facilities is objectively impracticable, their disposal at a suitable offshore location of low environmental sensitivity may be considered. The identification and environmental authorization of such a disposal site shall form part of the approval of the environmental terms for the overall drilling project.*

*14. During the execution of each exploratory drilling operation, the provisions, design choices, and outcomes of the design stage shall be implemented in full and without deviation, through an*

implementation control system and appropriate record-keeping, so that the environmental protection measures incorporated at the design stage (including compliance with the environmental terms and conditions) are effectively put into practice. In addition:

14.1. No material or substance of any kind shall be discharged into the sea other than seabed drill cuttings, provided that such discharge is authorized under the Environmental Terms Approval Decision (AEPO). These materials shall be separated from the drilling fluids using the best available techniques and shall be disposed only at the location that has been designated and authorized for this purpose as described above. All other materials and substances shall be collected and transported for management and disposal in accordance with the applicable waste management legislation.

14.2. The execution and management of individual operations (such as cementing and other sealing operations, well testing involving flaring, maintenance activities, and similar works) shall be organized and carried out so as to minimize environmental impacts. The corresponding measures shall constitute a dedicated section of the Environmental Impact Assessment and of the associated approval of the environmental terms.

14.3. Impacts on navigation shall be minimized.

15. Abandonment of each drilling site shall be subject to the implementation of all necessary measures to ensure the complete prevention of potential environmental impacts. These measures shall reflect the highest available level of technological solutions and shall be addressed in a dedicated section of the Environmental Impact Assessment and the associated approval of the environmental terms.

*\*Condition 7.1 of the approval of the Strategic Environmental Assessment study for the exploration and exploitation of hydrocarbons in eleven marine areas in the Ionian Sea (Respective SEA Approval No 30373, 03.07.2017)*

Chapter C, of the same approved Strategic Environmental Assessment study states the monitoring system for the significant environmental impacts arising from the implementation of the program:

1. To monitor the significant environmental impacts, an integrated system shall be developed on the basis of the following principles:

1.1. Monitoring shall concern both the condition of the environment in the wider area affected by the works of hydrocarbons exploration and areas of direct impact.

1.2. For the purposes of monitoring, wider area shall mean at least the entire applicable active exploration and exploitation concession area. In this area, physical and chemical properties of key environmental sectors shall be recorded, such as mainly:

- marine waters, including their physical and chemical properties as well as the dynamics of currents,
- local meteorology, particularly to the extent it affects water dynamics,
- the surface layer of the seabed, particularly regarding its role in the health of marine ecosystems.

1.3. In the immediate area, monitoring should cover all the above and additionally include magnitude and indicators related to

- the implementation of environmental conditions to be approved for each individual project,
- compliance with safety procedures related to the prevention of accidents with environmental impact.

1.4. The spatial and temporal density of the recordings, and the means used to make them (e.g. permanent or mobile stations, suitable vessels etc.) must be selected according to the scale of the phenomena to be monitored, with appropriate variations between the immediate and wider area.

1.5. In the wider area, to understand and correlate the parameters, integrated computational simulations with analytical forecasting potential shall be developed, using existing initiatives such as the "Poseidon" system ([www.poseidon.hcmr.gr](http://www.poseidon.hcmr.gr)). Measurements and recordings in the wider area should be designed and conducted in a manner that allows the validation of computational results.

1.6. The collection and processing of data for the monitoring of environmental impacts should be conducted annually. During each year, data shall be collected on a more regular basis, to allow trending with a shorter temporal development.

1.7. Environmental indicators will be used as key monitoring parameters which should represent in a comprehensive way important aspects of the developments with regards to the quality of the environment.

1.8. Once the production prospects have been finalized, a seismicity activity monitoring system should be established, using appropriate technology and the existing seismographic network. This system should actively contribute to the safety of the production facilities, by monitoring the temporal evolution of the local micro-seismicity and macro-seismicity, as well as of other data related to the deformation of the ground. The technical details of the above system and the way in which it will comply with the above guidelines and safety requirements pursuant to L. 4409/2016 will be a distinct part of the relevant Environmental Impact Assessment (EIA)

2. Monitoring shall be carried out under the responsibility of the Environmental Unit provided for in paragraph B.II.1\*.

3. The monitoring system shall be designed by the Environmental Unit and communicated to the Planning Authority, which, at its discretion and/or following opinions provided by competent authorities or case-specific expert committees, may request amendments or improvements.

4. The final determination of the complete set of indicators to be monitored shall constitute part of the preparation of the monitoring program. Indicatively and not exhaustively, the following indicators may be recorded:

- 4.1. Marine water quality indicators, including physicochemical and biological characteristics.
- 4.2. Marine ecosystem integrity indicators, covering both photosynthetic and chemosynthetic biological communities.
- 4.3. Ecosystem service indicators reflecting the services provided by the marine environment to local communities, including fisheries and tourism, with the selection of parameters and



characteristics capable of representing the evolution of these services and any potential impacts arising from the program.

4.4. Indicators of the progress of program implementation, in terms of projects and activities completed, as well as those planned for the following year.

5. The results of monitoring environmental impacts shall be compiled into an annual report, which shall also include an assessment of those results and proposals for any corrective actions that may be required. This report shall be made publicly available by being posted on a website that the Environmental Unit shall be required to maintain. The same website shall provide interested members of the public with the opportunity to submit their comments on the content of the report.

\*B.II.1.: The comprehensive responsibility for preventing, minimizing, and addressing environmental impacts shall be assigned to a dedicated Environmental Unit. This Unit shall be established and operated under the sole responsibility of the entity to which the right to explore for and exploit hydrocarbons in each area has been granted, while it shall be supervised by the Planning Authority.

The table below outlines the main environmental constraints identified and the recommendations that need to be carried forward in the Project ESIA process to prove compliance with the wider environmental regulatory framework, as anticipated in the pertinent Strategic Environmental Assessment (SEA) of the Ionian Sea Concession blocks:

**Table 5-3: Compliance requirements to be demonstrated as satisfied within the Project EIA, based on SEIA**

| Environmental constraints                                                               | Compliance criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Applicable in the exploratory drilling phase                           |
|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| Effects of Airgun Noise on Marine Mammals and Turtles                                   | During seismic surveys, licenses should be required to implement a protocol to reduce the risk of auditory trauma to marine mammals and sea turtles. As a minimum provision, the protocol should allow for: soft start, visual monitoring, acoustic monitoring, shutdown of the array.                                                                                                                                                                                                                                                                                                                                                           | Yes, conditional that usage of airguns is foreseen as part of the VSP. |
| Effects of Sea Floor Disturbances and Drilling Discharges on Benthic communities        | Prior to conducting activities that involve drilling, anchoring, placement of drilling rigs or production facilities on the sea floor, or installation of pipelines, licenses should be required to use high-resolution seismic survey (i.e., geohazards) data, 3D seismic survey data, and any other pertinent information available to identify hard bottom areas that could support important such communities. If any such areas are identified, licensees should be required to conduct mud and cuttings discharge modeling and/or to establish a separation distance that will protect these hard bottom areas and associated communities. | Yes                                                                    |
| Effects of Sea Floor Disturbances and Drilling Discharges on Chemosynthetic Communities |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Yes                                                                    |



| Environmental constraints                                                                          | Compliance criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Applicable in the exploratory drilling phase                                                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Effects of Sea Floor Disturbances on Shipwrecks and Submerged Archaeological Resources</b>      | Prior to conducting exploration or exploitation activities that involve anchoring, placement of drilling rigs or production facilities on the sea floor, or installation of pipelines, licensees should be required to conduct a remote sensing survey of the sea floor to evaluate the potential for shipwrecks and other submerged archaeological resources. Licensees should be required to submit an archaeological assessment report by a qualified marine archaeologist to include any identified archaeological resources and recommendations for avoidance or further investigation. Based on the report, the Ministry could require avoidance or other protective measures. | Yes                                                                                                                                                                                                                                                |
| <b>Effects of Seismic Survey Vessels and Towed Streamers on Fishing, aquacultures and shipping</b> | Implementation of voluntary measures as the soft start, in order to reduce impact on fish. Licensees should be required to consult with stakeholders prior to conducting streamer surveys to ensure that conflicts with fishing, aquaculture and shipping activities are minimized.                                                                                                                                                                                                                                                                                                                                                                                                  | Yes                                                                                                                                                                                                                                                |
| <b>Effects of Well Testing on Air and Water Quality</b>                                            | During well testing, licensees should be required to:<br>(1) use a high-efficiency burner to reduce the amount of hydrocarbon fallout and<br>(2) monitor the sea surface to ensure that no visible sheen is produced.<br>(3) comply with MARPOL requirements in relation to all kind of wastes, effluents, emissions                                                                                                                                                                                                                                                                                                                                                                 | Yes, conditional that there is well testing included in the planned drilling operations. For clarity, no well testing is planned for the exploration well Asopus-1                                                                                 |
| <b>Effects of Helicopter Traffic on Important Bird Areas</b>                                       | Licensees should be advised that helicopters engaged in support operations should avoid flying over SPAs and IBAs when traveling to or from the drilling rig. A map of SPAs and IBAs should be provided for this purpose.                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Yes                                                                                                                                                                                                                                                |
| <b>Effects of Structure Removals on Marine Mammals and Sea Turtles</b>                             | Licensees should be required to follow international best practice for safe structure removal during decommissioning. Prior to structure removals, a decommissioning plan should be prepared that includes monitoring for the presence of marine mammals and sea turtles to avoid effects of underwater detonations.                                                                                                                                                                                                                                                                                                                                                                 | Yes, as all temporary subsea equipment deployed during the drilling campaign will be retrieved using a remotely operated vehicle (ROV). A post-operation seabed survey will be conducted to confirm clearance of debris and recovery of equipment. |
| <b>Effects of Oil Spills and hydrogen sulphide on the Marine Environment</b>                       | Elaboration by the license holders of a plan to assess the hydrocarbon leak probability and possible resulting fire and how to fight against them, but also in accordance with the International Convention for the Prevention of Pollution from Ships, 1973 (MARPOL), ships as rigs are required to have in place a contingency plan for dealing with oil pollution (Shipboard Oil Pollution and Emergency Plan, SOPEP), submitted in delegating Ministry for evaluation and approval.<br><br>Conduct a spill trajectory model to identify likely spill trajectories, using seasonal meteorological and oceanographic data.                                                         | Yes                                                                                                                                                                                                                                                |

| Environmental constraints                           | Compliance criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Applicable in the exploratory drilling phase |
|-----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| <b>Transboundary Environmental Impact</b>           | <p>During the process of hydrocarbon activities, the relevant provisions of the Barcelona Convention should be considered, which regulates in detail such matters, the EU Directives (e.g. Directive 2013/30) and the Law of the Sea and other legislative frameworks. In addition, a detailed analysis of the provisions of the Barcelona Convention offshore Protocol and its Annexes must be undertaken, to confirm that all the research and exploitation activities of hydrocarbons in the license area are in line with the requirements of this protocol.</p> <p>On ensuring cross-border availability and compatibility of intervention tools, it is noted that Greece is a member of the OPRC Convention (Oil Pollution Preparedness, Response and Cooperation, n. 2252/1994) which regulates in detail such issues, while poses the needed National Contingency Plan in order to address pollution from oil and other harmful substances (PD 11/2002).</p> | Yes                                          |
| <b>Discharge Control, Management and Monitoring</b> | <p>Discharge requirements should be established for drilling fluid and cuttings, produced water (if any), and other effluents from hydrocarbon activities in the license area. In developing the requirements, the Barcelona Convention offshore protocol. The OSPAR Convention offshore oil and gas industry strategy may be considered as sources of guidance, as well as MARPOL convention and the directive 2013/30/EC. In addition, it is recommended that detailed requirements of the Barcelona Convention offshore protocol and its annexes should be reviewed to ensure that all hydrocarbon activities in the license area are consistent with the requirements of the protocol.</p>                                                                                                                                                                                                                                                                       | Yes                                          |

(Source: Strategic Environmental Impact Study (SEA) for the Area of Exploration and Exploitation of Hydrocarbons in the Ionian Sea).

### 5.1.3 Existing permitting status of Igoumenitsa Port and Corfu International Airport (CFU)

The Port of Igoumenitsa is currently covered by a valid Environmental Terms Approval Decision (AEPO), originally issued through Joint Ministerial Decision (JMD) No. 144974/08.06.2005 for the construction and operation of Phase B of the New Port and subsequently amended by JMD No. 139663/18.05.2009 to incorporate the Phase C expansion works under a single environmental approval. The AEPO was further amended in 2013 to permit the establishment and operation of a temporary construction site, including a concrete batching plant and associated ancillary facilities required for the execution of the Phase C works. These amendments did not alter the overall scope of the port development but introduced additional environmental conditions governing the temporary construction of facilities.

The environmental permit currently in force is Decision ΥΠΕΝ/ΔΙΠΑ/12891/794/17.03.2022, which extended the validity of the original AEPO until 25 September 2035 and updated its environmental conditions to reflect the current environmental regulatory framework established under Law 4014/2011 and subsequent legislation. The Decision also approved the replacement of the environmentally licensed concrete batching plant with a modern installation of equivalent function, concluding that the modification would not result in significant additional environmental impacts and therefore did not require the preparation

of a new Environmental Impact Assessment. In addition, the Decision revised and supplemented several environmental conditions relating to air quality, water and marine protection, waste management, environmental monitoring, noise, flood risk, and compliance with the River Basin and Flood Risk Management Plans applicable to the Epirus Water District.

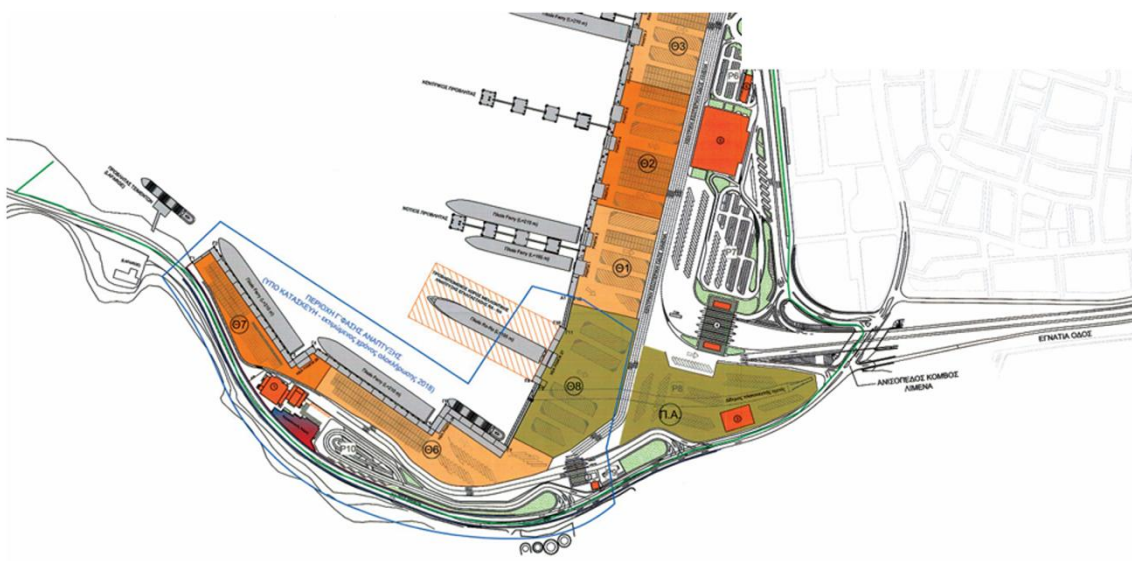
Accordingly, the Port of Igoumenitsa currently operates under a valid and consolidated environmental permitting framework that incorporates the original environmental approval together with all subsequent amendments and extensions. The AEPO remains valid until 25 September 2035, subject to compliance with its environmental terms and conditions, after which the project owner is required to initiate the renewal procedure in accordance with Article 5 of Law 4014/2011, as amended.

The Port Development Plan (Master Plan) was updated in 2013 to reflect revised traffic forecasts and the long-term development needs of the Port of Igoumenitsa, adopting a planning horizon to 2038. The update sought to optimise the spatial organisation of the port through the allocation of operational areas, land uses and supporting infrastructure, ensuring the efficient use of the available port area and accommodating the completion of the Phase C expansion works.

The updated Master Plan was approved through Ministerial Decision No. 8216/126/2014, entitled "*Update of the Igoumenitsa Port Development Plan*". The Decision established the revised spatial planning framework, including land-use allocations, building conditions and development provisions for the port area, and constitutes the statutory planning framework governing the future development and operation of the Port of Igoumenitsa.

The 2014 approved Port Development Plan (Master Plan) defines the functional zoning of the Port of Igoumenitsa, including the Old Port Area, Ferry Terminal Area, Cruise Area, Central International Ferry Area, Unaccompanied Freight and Ro-Ro Area, and the Southern Supplementary International Ferry Area, together with the corresponding land-use allocations and building conditions.

Figure 5-1 presents the operational areas within the port's-controlled land zone. The Areas of Interest are located within Operational Areas 06 (Area 1) and ΠΑ (Area 2) of the Port of Igoumenitsa, as defined in the approved Port Development Plan (Master Plan) (Ministerial Decision 8216/126/2014). These areas form part of the designated operational port zone and are zoned and planned for port-related activities and associated supporting infrastructure.



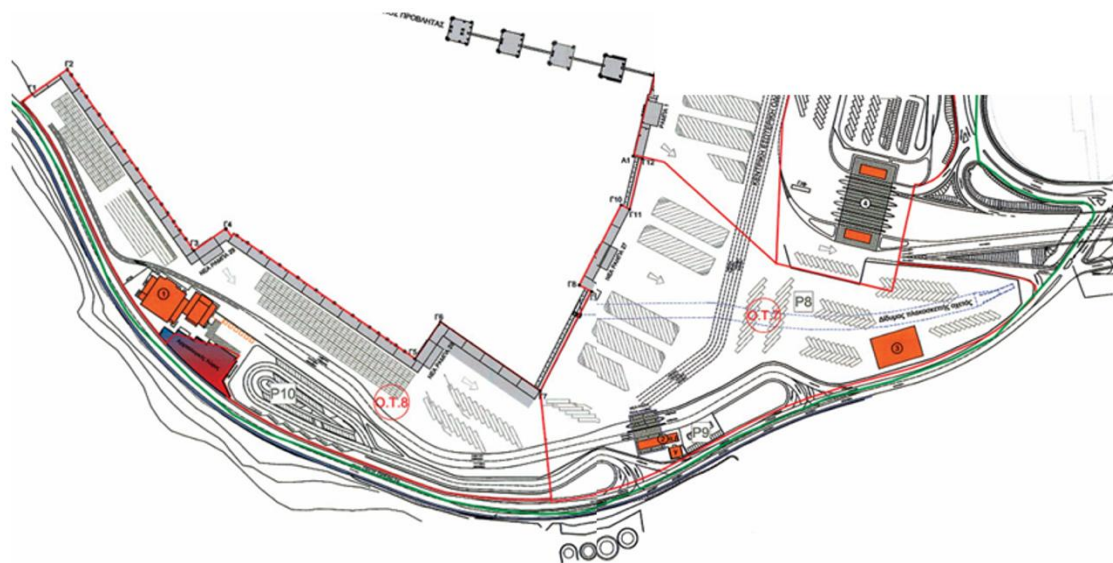
(Source: Approved Masterplan Ministerial Decision No. 8216/126/2014)

Figure 5-1: Operational areas within the port's-controlled land zone

Table 5-4: Operational areas within terrestrial port zone

| OPERATIONAL AREAS WITHIN CONTROLLED TERRESTRIAL PORT ZONE                           |                                                                              |                                                                        |           |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------|-----------|
| Area                                                                                |                                                                              | Foreseen land use                                                      | Area (m²) |
|  | 01                                                                           | Vehicles standby area for international lines (Phase A)                | 15,300    |
|  | 02                                                                           | Vehicles standby area for international lines (Phase A)                | 18,960    |
|  | 03                                                                           | Vehicles standby area for international lines (Phase A)                | 16,280    |
|  | 04                                                                           | Vehicles standby area for international lines (Phase A)                | 13,800    |
|  | 05                                                                           | Vehicles standby area for international lines (Phase A)                | 11,760    |
|  | 06                                                                           | Vehicles standby area for international lines (Phase C)                | 19,300    |
|  | 07                                                                           | Vehicles standby area for international lines (Phase C)                | 10,130    |
|  | 08                                                                           | Vehicles (heavy weight) standby area for international lines (Phase C) | 24,820    |
|  | PA                                                                           | Area for management of non-escorted cargo (Phase B)                    | 24,520    |
|  | PK                                                                           | Cruise support area (extra Schengen) (Phase B)                         | 35,946    |
|  | PT                                                                           | Customs area (Phase B)                                                 | 3,840     |
|  | PP                                                                           | Coastal shipping and ferry area (Phase B)                              | 17,945    |
|  | Green zone                                                                   |                                                                        |           |
|  | Limits of terrestrial port zone (as currently stands – JMD 876B/28.06.2005)) |                                                                        |           |

As shown in the Figure below, Area of Interest 1 falls within Building Block (O.T.) 8, while Area 2 falls within Building Block (O.T.) 7, both of which are designated for port-related services, commercial activities and storage uses.



(Source: Approved Masterplan Ministerial Decision No. 8216/126/2014)

Figure 5-2: Layout of logistical support facilities at the port infrastructure

Table 5-5: Approved terms, building restrictions and land uses

| APPROVED TERMS AND BUILDING RESTRICTIONS |                                       |                                      |                                           |                      |                                          |
|------------------------------------------|---------------------------------------|--------------------------------------|-------------------------------------------|----------------------|------------------------------------------|
| No of building block                     | Building block area (m <sup>2</sup> ) | Allowable coverage (m <sup>2</sup> ) | Allowable building area (m <sup>2</sup> ) | Allowable height (m) | Allowed land uses                        |
| OT1                                      | 30,408                                | 1,520.40                             | 1,520.40                                  | 8 m                  | Services, Storage areas                  |
| OT2                                      | 81,099                                | 4,055.00                             | 4,055.00                                  | 8 m                  | Services, Storage areas                  |
| OT3                                      | 15,884                                | 2,382.60                             | 3,176.80                                  | 14 m                 | Services, Commercial zone, Storage areas |
| OT4                                      | 59,610                                | 8,941.50                             | 11,922.0                                  | 14 m                 | Services, Commercial zone, Storage areas |
| OT5                                      | 42,963                                | 2,148.15                             | 2,148.15                                  | 8 m                  | Services, Storage areas                  |
| OT6                                      | 35,450                                | 8,862.50                             | 12,407.50                                 | 14 m                 | Services, Commercial zone, Storage areas |
| OT7                                      | 72,775                                | 7,277.50                             | 7,277.50                                  | 14 m                 | Services, Commercial zone, Storage areas |
| OT8                                      | 60,744                                | 3,037.20                             | 6,074.40                                  | 14 m                 | Services, Commercial zone, Storage areas |
| <b>TOTAL</b>                             | <b>398,933</b>                        | <b>38,224.85</b>                     | <b>48,581.75</b>                          |                      |                                          |

Corfu International Airport ("Ioannis Kapodistrias" - CFU) currently operates under a valid Environmental Terms Approval Decision, originally issued by Ministerial Decision No. 11945/08.03.2017 for the operation of the existing airport and the implementation of modernization, improvement and maintenance works to its infrastructure. The environmental approval was subsequently amended in 2018 to update specific environmental conditions and, most recently, by Decision ΥΠΕΝ/ΔΙΠΑ/123235/8107/23.11.2022, which remains the applicable environmental permit governing the operation and development of the airport.



## 5.2 Legislative framework

### 5.2.1 Legislation related to hydrocarbon exploration and production

#### 5.2.1.1 National Law 2289/1995 for exploration, research and exploitation of hydrocarbons

Law 2289/1995 (GG A' 27 / 08.02.1995) "Exploration, research and exploitation of hydrocarbons and other provisions" established Greece's foundational hydrocarbons regime by confirming State ownership of all subsurface resources and introducing a licensing system for private exploration and production under strict state control. The law introduces a structured licensing system based on competitive tenders or negotiated awards, requiring companies to demonstrate technical and financial capability and to commit to binding work programmes divided into exploration phases with strict timelines. It regulates the full upstream lifecycle, from geological surveys and seismic exploration to exploratory drilling and, in the event of a commercial discovery, the granting of production rights subject to State approval of development plans and environmental permitting. It also defines the fiscal regime through royalties, taxation, and potential bonus payments, while embedding strong environmental obligations, including compliance with EU directives, mandatory environmental impact assessments, and decommissioning requirements. Importantly, the law grants the State extensive regulatory control, including oversight of operations, approval of transfers of participating interests, and the ability to enforce compliance or terminate rights where obligations are not met, thereby creating a contract-based but firmly state-controlled hydrocarbons regime.

The law is divided into the following sections and articles:

#### CHAPTER A

##### EXERCISE OF STATE RIGHTS

- **Article 1** – Definitions
- **Article 2** – State Rights over Hydrocarbons; Prospecting, Exploration and Exploitation of Hydrocarbons; Methods of Granting Rights; Exploration and Exploitation through Lease Agreements and Production Sharing Agreements.
- **Article 3** – State Participation in Hydrocarbon Exploration and Exploitation; Exploitation without Prior Exploration under a Lease Agreement or a Production Sharing Agreement.
- **Article 4** – Contractors

#### CHAPTER B

##### RIGHTS AND OBLIGATIONS OF THE CONTRACTOR

- **Article 5** – Rights and Obligations of the Contractor during the Exploration Phase and the Exploitation Phase – Unified Exploration and Exploitation of Adjacent Areas
- **Article 6** – Execution of Operations and Works – Rights over Immovable Property – Contractors and Subcontractors – Imports, Exports and Procurement – Foreign Personnel of the Contractor
- **Article 7** – State Right to Purchase Produced Products – Assignment of Rights by the Contractor – Control of the Contractor's Activities and Expenditures – Ownership of Hydrocarbons
- **Article 8** – Income Taxation

- **Article 9** – Assignment Rights under Lease and Production Sharing Agreements; Tax and Other Exemptions
- **Article 10** – Exploitation Stage Contract; Suspension and Extension of Time Limits; Contractor Default and Termination; Dispute Resolution

## CHAPTER C

### PROVISIONS CONCERNING D.E.P. – E.K.Y. GENERAL PROVISIONS

- Article 11
- **Article 12** – Compulsory Expropriation – Granting of Rights to Use Public Property, the Seashore and Marine Areas – Offshore Installations and Structures – Exploitation of Hydrocarbons on the Continental Shelf or within the Exclusive Economic Zone (EEZ) – Installations within Territorial Waters – Safety Measures – Environmental Protection – Criminal and Administrative Sanctions – Social Security – Representation of the State

## CHAPTER D

### REGULATION OF PETROLEUM PRODUCTS MATTERS AND OTHER PROVISIONS

- Article 13
- Article 14
- Article 15
- **Article 16** - Amendment of the Provisions of Law 336/1976
- Article 17
- Article 18
- Article 19
- Article 20
- **Article 21** – Entry into force

#### 5.2.1.2 National Law 4001/2011 on Electricity, Natural Gas and Hydrocarbons

Over time, the law was not replaced but progressively modernised with Law 4001/2011 “On the operation of electricity and natural gas energy markets, on the exploration, production and transportation networks of hydrocarbons, and other regulatory provisions” including provisions that develop and modernize Law 2289/1995 by integrating the hydrocarbons exploration and production regime into a broader and more comprehensive energy and regulatory framework fully aligned with European Union law. While Law 2289/1995 establishes the fundamental concession-based contractual model, the principle of State ownership of hydrocarbons, and the licensing system for exploration and production, Law 4001/2011 (GG A’ 179 / 22.08.2011) introduces institutional modernization of the energy market, strengthens the role of the Regulatory Authority for Energy (RAE) as an independent regulator, clearly separates regulatory from operational State functions, and integrates hydrocarbons into a unified energy system covering electricity, natural gas, and transmission networks.

At the same time, it enhances transparency and competition in licensing procedures, promotes EU principles of market access, and establishes a more structured and stringent regulatory oversight framework for energy



activities, without altering the core principle of Law 2289/1995 regarding State ownership of natural resources, but instead transforming the overall regime from a purely contractual concession model into a hybrid system in which the market operates under strong regulatory and institutional supervision.

In 2018, the system was significantly refined through reforms that reinforced concession-style agreements, formalised transfer controls, and enabled parliamentary ratification of offshore contracts such as Block 2 (Law 4525/2018); and in the post-2020 period, the framework has evolved into a contract-and-administration-driven system where legal continuity is maintained through the original 1995 law, while operational flexibility is managed via detailed lease agreements, directly enforceable through parliamentary ratification (GG). As a result, Greece's hydrocarbons regime today functions as a hybrid structure combining a stable 1995 legal foundation, EU-aligned regulatory oversight, and contract-specific governance for individual offshore blocks.

## 5.2.2 Broader framework of environmental permitting

### 5.2.2.1 Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment (EIA)

Environmental Impact Assessment (EIA) was introduced for the first time in Europe in 1985 by the EIA Directive (85/337/EEC) and represents the first key instrument in European Union's environmental policy that puts into force the obligation to account the environmental parameter / impact of projects / activities at the stage of implementation of decisions. Some of notable features include:

- The range of projects and activities, ranging from industrial and other productive activities to infrastructure projects such as roads, dams, ports mainly in the form of public investment.
- The requirement to prior (ex-ante) impact assessment so that environmental issues can be fully incorporated in the design, implementation and operation.
- Opening the process to the public which asked to be informed and to participate in decision-making.
- And finally, the requirement for detailed and comprehensive information on the impact on the environment, i.e. environmental impact study.

The EIA procedure as specified in the relevant Directive is summarized in the following stages:

- The project developer may request the competent environmental authority to identify the issues that should be covered by the Environmental Impact Assessment and the relevant information that should be provided by the investor (scoping).
- The investor must provide the required information on the environmental impacts of the project (Environmental Impact Assessment - EIA, Annex IV) to the competent authority.
- The competent environmental services, the public (and the affected Member States) must be informed and give their opinion on the EIA.
- The competent environmental authority decides whether to approve the project or not, considering the results of the EIA consultation. The public is informed of the decision, which can also challenge before court.

The EIA Directive applies to a wide range of public and private projects, which are defined in Annexes I and II of the aforementioned Directive. Projects included in Annex I are considered to have significant effects on the environment and require an EIA procedure.

For projects listed in Annex II, the National Authorities should decide through a screening process whether an EIA procedure is required, considering criteria/thresholds or a case-by-case examination, as well as the criteria in Annex III. Twelve years later, and following a whole new service industry on the environmental impact assessment sector and drawing conclusions from the hitherto implemented, the EIA Directive was amended by 97/11/EC in order to:

- Be in line with the Espoo Convention on the assessment of transboundary impacts on the environment.
- Extend the EIA to more types of projects and activities.
- Improving and expanding the criteria against which a project is subject to fall within the obligations of an EIA.

EIA Directive has been further amended twice through Directive 2003/35/EC (harmonized public participation process with provisions of Aarhus Convention) and Directive 2009/31/EC (prescription for CO<sub>2</sub> transport and storage projects). This was eventually codified by Directive 2011/92/EU of 13<sup>th</sup> of December 2011.

The most recent update of the EIA Directive (2014/52/EU) entered into force on 15 May 2014 to simplify the rules for assessing the potential effects of projects on the environment. The member states (MS) need to have finalised the transposition into their legislative frameworks until 16 May 2017.

The update is in line with the drive for smarter regulation, so it reduces the administrative burden. It also improves the level of environmental protection, with a view to making business decisions on public and private investments more sound, more predictable and sustainable in the longer term. The latest approach pays greater attention to threats and challenges that have emerged since the original rules came into force some 25 years ago.

This means more attention to areas like resource efficiency, climate change and disaster prevention, which are now better reflected in the assessment process. The main amendments are as follows:

- Member States now have a mandate to simplify their different environmental assessment procedures.
- Timeframes are introduced for the different stages of environmental assessments: screening decisions should be taken within 90 days (although extensions are possible) and public consultations should last at least 30 days. Member States also need to ensure that final decisions are taken within a "reasonable period of time".
- The screening procedure, determining whether an EIA is required, is simplified. Decisions must be duly motivated in the light of the updated screening criteria.
- EIA reports are to be made more understandable for the public, especially as regards assessments of the current state of the environment and alternatives to the proposal in question.
- The quality and the content of the reports will be improved. Competent authorities will also need to prove their objectivity to avoid conflicts of interest.
- The grounds for development consent decisions must be clear and more transparent for the public. Member States may also set timeframes for the validity of any reasoned conclusions or opinions issued

as part of the EIA procedure.

If projects entail significant adverse effects on the environment, developers will be obliged to do the necessary to avoid, prevent or reduce such effects. These projects will need to be monitored using procedures determined by the Member States.

Existing monitoring arrangements may be used to avoid duplication of monitoring and unnecessary costs. According to Article 1 of the Directive, this shall apply to the assessment of the environmental effects of those public and private projects, which are likely to have significant effects on the environment.

Although specific procedures may vary significantly among different Member States, the principal phases of the EIA Process are common to the European Community. Figure below, presents a flow chart of the EIA process phases, distinguishing the compulsory phases (highlighted in yellow) from the optional EIA procedures (not highlighted).

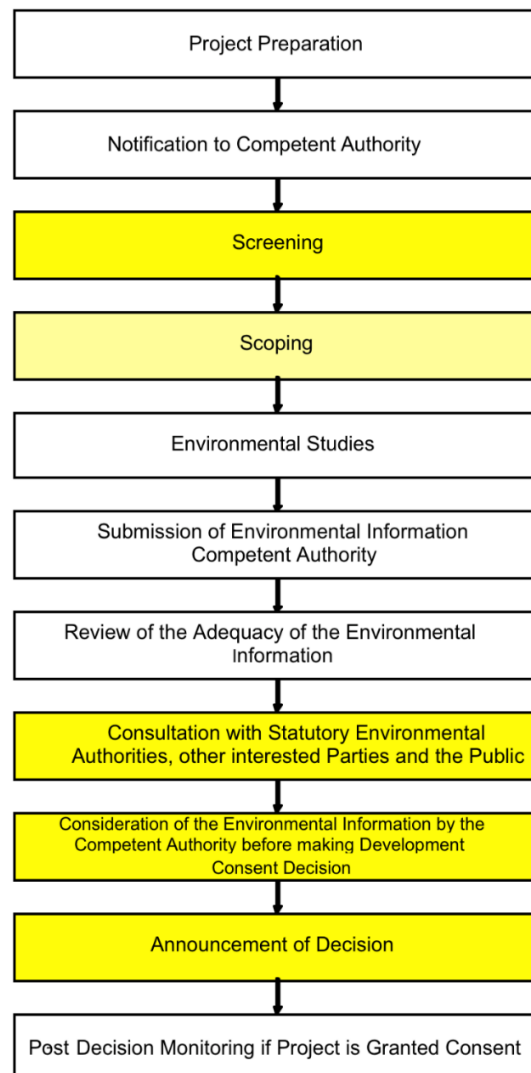


Figure 5-3: Flow chart of EIA process as per EU Directive

The methodology used for preparing this ESIA Study has been developed in accordance with the requirements of Directive 2011/92/EU on the assessment of the environmental effects of certain public and private projects, as amended by Directive 2014/52/EU. It is in line with the relevant national laws implementing this Directive into Greek law, including Law 4014/2011, as amended by Law 4685/2020. Overall, the approach is consistent with the applicable EU legal framework governing the ESIA process.

### 5.2.2.2 Legislative Framework for Impact Assessment

The framework for impact assessment – permitting is governed by the following (including the ratification of the conventions, as applicable), as presented in the table below.

Table 5-6: Applicable legislative framework for the impact assessment – permitting of offshore installations

| LAW/DECISION AND RELEVANT EUROPEAN (EU)/INTERNATIONAL DOCUMENTS                                   | REFERENCE NUMBER       | SUBJECT                                                                                                                                                                                              |
|---------------------------------------------------------------------------------------------------|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Law 4014</b>                                                                                   | GG 209/A/21-09-2011    | On environmental permitting                                                                                                                                                                          |
| <b>Law 4685</b>                                                                                   | GG 92/A/07-05-2020     | On environmental permitting                                                                                                                                                                          |
| <b>Law 1650</b>                                                                                   | GG 160/A/18-10-1986    | On environmental protection                                                                                                                                                                          |
| <b>Law 3010</b>                                                                                   | GG 91/A/25-04-2002     | Harmonization of Law 1650 with Directives: 96/61/EC and 97/11/EC                                                                                                                                     |
| <b>Law 3937</b>                                                                                   | GG 60/A/31-03-2011     | On biodiversity conservation                                                                                                                                                                         |
| <b>Ministerial Decision 1958 (as amended and in force, see Section 5.2.1.2 above for details)</b> | GG 21/B/13-01-2012     | On the environmental classification of projects and activities                                                                                                                                       |
| <b>Law 4936</b>                                                                                   | GG 105/A/27-05-2022    | National Climate Law                                                                                                                                                                                 |
| <b>Ministerial Decision ΥΠΕΝ/ΔΙΠΑ/143898/9866</b>                                                 | GG 7322/B/31-12-2024   | Amendment of the contents of environmental licensing studies for projects and activities of Category A under Law 4014/2011 for alignment with Article 18 of the National Climate Law (Law 4936/2022) |
| <b>Law 4519</b>                                                                                   | GG 25/A/20-02-2018     | Management Bodies for Protected Areas and other provisions                                                                                                                                           |
| <b>JMD 50743</b>                                                                                  | GG 4432/B/2017         | Revision of the national list of the European Natura 2000 Ecological Network                                                                                                                         |
| <b>Ministerial Decision 48963</b>                                                                 | GG 2703/B/05-10-2012   | On the Specifications for the Contents of Environmental Permitting                                                                                                                                   |
| <b>Ministerial Decision 170225</b>                                                                | GG 135/B/17-01-2014    | On the specification of contents for environmental permitting studies                                                                                                                                |
| <b>JMD 30651</b>                                                                                  | GG 1817/B/02-06-2014   | On the specification of the Electronic Environmental Registry requirements                                                                                                                           |
| <b>Law 3422</b>                                                                                   | GG 303/A/13-12-2005    | Ratification of the Aarhus Convention                                                                                                                                                                |
| <b>Ministerial Decision 21697</b>                                                                 | GG 224/YODD/03-05-2012 | Composition of the Central Council for Environmental Permitting                                                                                                                                      |
| <b>Law 4042</b>                                                                                   | GG 24/A/13-02-2012     | Environmental liability - framework for waste generation and management                                                                                                                              |
| <b>Law 4819</b>                                                                                   | GG 129/A/23-07-2021    | Integrated framework for waste management                                                                                                                                                            |
| <b>JMD 172058</b>                                                                                 | GG 354/B/17-02-2016    | Establishment of rules, measures and terms for the prevention of major accident hazards in installations or units due to the presence of                                                             |

| LAW/DECISION AND RELEVANT EUROPEAN (EU)/INTERNATIONAL DOCUMENTS                                                                                                                                             | REFERENCE NUMBER                                                                             | SUBJECT                                                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                             |                                                                                              | dangerous substances, in compliance with Directive 2012/18/EU                                                                                                                                                                                  |
| <b>JMD 1915</b>                                                                                                                                                                                             | GG 304/B/02-02-2018                                                                          | Environmental risk assessment                                                                                                                                                                                                                  |
| <b>Regulation (EC)</b>                                                                                                                                                                                      | Regulation (EC) No 166/2006 of the European Parliament and of the Council of 18 January 2006 | On the establishment of a European Pollutant Release and Transfer Register and amending Council Directives 91/689/EEC and 96/61/EC                                                                                                             |
| <b>Guidance Document</b>                                                                                                                                                                                    | European Commission, 31.05.2006                                                              | On the implementation of the European PRTR                                                                                                                                                                                                     |
| <b>Law 743</b>                                                                                                                                                                                              | GG 137/A/17-10-1977                                                                          | On the protection of the marine environment                                                                                                                                                                                                    |
| <b>Law 743</b>                                                                                                                                                                                              | GG 2970/B/19-12-2001                                                                         | On shoreline and beach and other provisions                                                                                                                                                                                                    |
| <b>Ministerial Decision 55/1998</b>                                                                                                                                                                         | GG 58/A/20-04-1998                                                                           | On the protection of the marine environment (codification of Law 743)                                                                                                                                                                          |
| <b>Ministerial Decision 11/2002</b>                                                                                                                                                                         | GG 6/A/21-01-2002                                                                            | National Emergency Response Plan for dealing with pollution incidents from oil and other harmful substances                                                                                                                                    |
| <b>Ministerial Decision ΥΠΕΝ/ΔΔΦΠΒ/50146/1786</b>                                                                                                                                                           | GG 3118/B/10-05-2023                                                                         | Establishment and approval of conservation objectives for bird species under paragraphs 1 and 2 of Article 4 of Directive 2009/147/EC in Special Protection Areas (SPAs) of the national Natura 2000 ecological network                        |
| <b>Ministerial Decision ΥΠΕΝ/ΔΔΦΠΒ/24776/985</b>                                                                                                                                                            | GG 1807/B/22-03-2023                                                                         | Establishment of conservation objectives for natural habitat types of Annex I and species of Annex II of Directive 92/43/EEC in Special Areas of Conservation and Sites of Community Importance of the national Natura 2000 ecological network |
| <b>JMD 174505/607</b>                                                                                                                                                                                       | GG 1311/B/2017                                                                               | On ambient air quality (Amendment of JMD 22306/1075/2007 and JMD 14122/549/E103/2011 in compliance with Directive 2015/1480/EU)                                                                                                                |
| <b>Barcelona Convention of 1976, Including pollution from the exploration and exploitation of hydrocarbons – Ratified by the Hellenic Parliament by Laws 855/1978 and 3022/2002</b>                         | GG 235/A/23-12-1978 & GG 144/A/19-06-2002 2013/5/EC                                          | Ratification of the International Convention for the Protection of the Mediterranean Sea against Pollution and its amendments                                                                                                                  |
| <b>International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC), 1990 – Ratified by the Hellenic Parliament by Laws 2252/1994 and 3100/2003</b>                                 | GG 192/A/18-11-1994 & GG 20/A/29-01-2003                                                     | Ratification of the OPRC Convention and its amendments                                                                                                                                                                                         |
| <b>International Convention for the Prevention of Pollution from Ships, 1973, as amended by the 1978 Protocol (MARPOL 73/78) – Ratified by the Hellenic Parliament by Law 1269, as amended and in force</b> | GG 89/A/21-07-1982                                                                           | Ratification of the International Convention for the Prevention of Pollution from Ships and its amendments                                                                                                                                     |
| <b>ACCOBAMS</b>                                                                                                                                                                                             | -                                                                                            | Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic area                                                                                                                                    |

| LAW/DECISION AND RELEVANT EUROPEAN (EU)/INTERNATIONAL DOCUMENTS | REFERENCE NUMBER    | SUBJECT                                                                                     |
|-----------------------------------------------------------------|---------------------|---------------------------------------------------------------------------------------------|
| <b>Ministerial Decision 148/2009</b>                            | GG 190/A/29-09-2009 | On environmental liability regarding the prevention and remediation of environmental damage |

As documented in the relevant preceding and following Sections, the methodology applied for the preparation of the present ESIA is developed in accordance with the requirements, specifications and guidelines of the national Legislative Framework, the European Directives, and the international Conventions and agreements on Environmental Impact Assessment and the achievement of the objective of environmental protection (with an emphasis on the marine environment).

#### 5.2.2.2.1 Law 4014/2011 on the Environmental Permitting of Projects and Activities

The national legislative framework was first enriched for the protection of the environment in 1986 with Law 1650/1986, which approached the first EIA Directive while also regulating a series of environmental issues that were considered quite radical for the time. The approach was rather detailed, and for the matters where a degree of flexibility was allowed for Member States, the law leaned toward stricter interpretation.

Amendments to the Directive brought changes to national legislation, which were established through Law 3010/2002. The main changes introduced included compliance with the new Directive, decentralization, and the establishment of the screening procedure. Later, the legal framework was revised with Law 4014/2011, which was accompanied by a series of JMDs, Ministerial Decisions, and Circulars, all aiming, along with the main law, at improving the overall outcome and increasing the added value of the procedures. In particular, Law 4014/2011 and *Ministerial Decision 5688/2018* (GG 988/B/21-03-2018), which amended it, introduced important fundamental improvements and changes.

The Environmental Impact Assessment process in Greece, for projects such as the proposed one, is summarized in the following phases (according to the current legislation) and is also presented diagrammatically in the flow chart that follows:

- 1 Submission of Environmental Impact Assessment Study:** The project developer submits the EIA<sup>14</sup> Study of the project to the Ministry of Environment and Energy (YPEN), Directorate of Environmental Permitting (DIPA)<sup>15</sup>.
- 2 Completeness Check:** DIPA/YPEN checks the EIA Study for completeness and may request additional information before forwarding it for consultation.

<sup>14</sup> The content of the Environmental Impact Assessment (EIA) is determined based on (a) the classification of the project (in accordance with Ministerial Decision (MD) ΔΙΠΑ/37674/27-07-2016, as amended by the following Ministerial Decisions: 2307 (GG 439/B/2018), MD ΥΠΕΝ/ΔΙΠΑ/64001/2029 (GG 4420/B/2018), MD ΥΠΕΝ/ΔΙΠΑ/94321/3907 (GG 5798/B/2018), MD ΥΠΕΝ/ΔΔΥ/24593/2902/2020 (GG 1482/B/2020), ΥΠΕΝ/ΔΙΠΑ/74463/4562 (GG 3291/B/2020), MD 92108/1045/Φ.15/2020 (GG 3833/B/2020), MD ΥΠΕΝ/ΔΙΠΑ/99398/6484/2020 (GG 4656/B/2020), ΥΑ ΥΠΕΝ/ΔΙΠΑ/17185/1069 (GG 841/B/2022), ΥΑ ΥΠΕΝ/ΔΙΠΑ/64712/4464 (GG 3636/B/2022), MD ΥΠΕΝ/ΔΙΠΑ/53510/3616 (GG 3327/B/2023), MD ΥΠΕΝ/ΔΙΠΑ/63951/4418/2024 (GG 3867/2024)) and (b) the detailed specifications set out in JMD 170225/2014 and its amendment by MD 1915/2018 and MD ΥΠΕΝ/ΔΙΠΑ/143898/9866/2024 (GG 7322/B/2024), for each type of project/activity.

<sup>15</sup> The content of the EIA Study is determined by (a) the project classification (in accordance with MD 1958/2012) and (b) the detailed specifications defined in JMD 170225/2014 for each type of project/activity.

- 3 **Institutional Consultation:** Opinion/response from Central Authorities or other competent Ministries, Regional Authorities, and other organizations<sup>16</sup>.
- 4 **Public Consultation:** The project is presented before the Regional Council during an open hearing where people may express their views.
- 5 **Decision on the Approval of Environmental Terms:** DIPA/YPEN examines the results of the consultation (institutional and public) and issues its decision, co-signed by the other competent Ministries.
- 6 **Publication of Decision:** The decision is published through the competent Regional Council.

The procedure for amending and renewing the approved Environmental Terms of Category **A1 projects** is provided for in Articles 5 and 6 respectively of Law 4014/2011, as applicable.

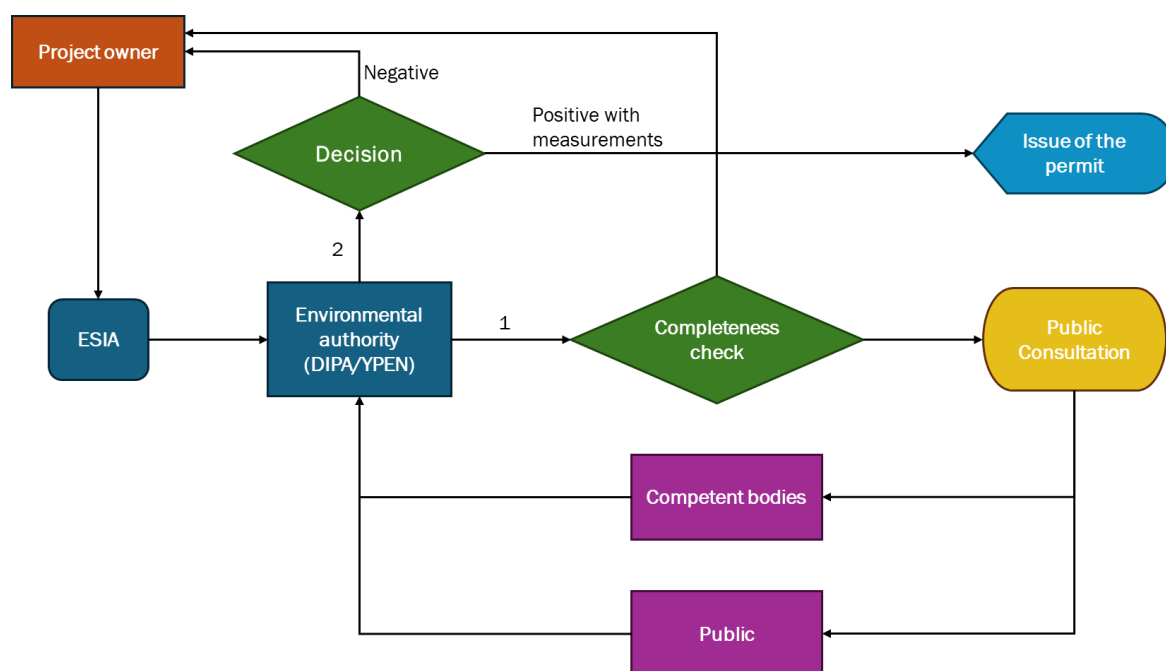


Figure 5-4: Flow chart of the EIA procedure according to the National Legal Framework

Regarding the consultation process for the evaluation of the EIA and the institutional information of the interested public, the provisions of JMD 1649/45/2014 apply, which define and specify the provisions of Article 19, paragraph 19 of Law 4014/2011 regarding:

- The consultation means between various authorities and
- The ways of informing the public as well as participation in the public consultation during the environmental permitting procedure.

The aforementioned JMD specifies further the consultation following the implementation of article 18, paragraph 5 of L.4014/2011 regarding the digital environmental registry. However, since a transition period

<sup>16</sup> The consultants are predetermined by JMD 1649/45/2014 for each type and category of project.



is expected until the setup of this registry, the procedures have also been specified for this period. Apart from this, the authorities to be consulted are also identified and stated in Annex B of the JMD.

This ESIA has been prepared and submitted in accordance with Law 4014/2011 on the environmental permitting of projects and activities, as amended and in force, and with the relevant secondary legislation that sets out the content, procedure and consultation requirements for Environmental Impact Assessments.

#### 5.2.2.2.2 Law 4685/2020 - Modernization of Environmental Legislation and Other Provisions

Environmental permitting in Greece, despite the amendments made to the legislation and the improved quality of studies by private consultants, remains a time-consuming administrative process and, therefore, a significant obstacle to the promotion of investments. Specifically, the environmental permitting process for new projects, which are vital for the development of the Greek economy, significantly exceeds the timeframes provided by the applicable legislation across all project categories. Additionally, the permitting process for existing investments, such as the renewal or modification of the Environmental Terms Approval (ETA) also exceeds the statutory timelines. Indicatively, in 40% of cases, new opinions are requested from competent services. As a result, existing investments are treated as new ones, incurring the corresponding delays. To accelerate and simplify the procedures to address longstanding operational problems and to create an investment-friendly environment in Greece, the provisions of Law 4685/2020 were enacted. These provisions constitute horizontal reform within the framework of EU legislation and introduce a faster, safer, and more efficient environmental permitting system. This chapter shortens and simplifies the environmental permitting process, while fully respecting environmental protection. The new regulations regarding the validity period of ETAs, as well as the process for their issuance, renewal, and modification, simplify the business environment and reduce the administrative burden on public authorities, which is further alleviated by allowing the engagement of private EIA evaluators, thus activating and strengthening a provision that had already existed under the original Law 4014/2011 (GG A' 209). The key principle underpinning this law, in terms of environmental permitting, is to relieve both public authorities and businesses of procedural burdens that do not contribute meaningfully to environmental protection.

More specifically, the main changes introduced by the new law in the field of environmental permitting are as follows:

Article 1: This provision extends the validity period of ETAs and introduces favourable conditions for Project Developers with environmental certification (EMAS and ISO 14001), as these ensure better compliance with environmental legislation and permit terms, while also providing a strong incentive to maintain environmental certification. In particular, with the amendment of point (a) of paragraph 8 of Article 2 of Law 4014/2011, the validity period of the ETA is set at fifteen years instead of the previous ten, provided that no changes occur based on the data on which the decision was issued. Additionally, the ETA validity is extended by six years for projects or activities implementing an Environmental Management System (EMS) according to the Eco-Management and Audit Scheme (EMAS), for as long as the EMS remains in effect. For projects or activities implementing an EMS according to ISO 14001 or a similar standard, the ETA validity is extended by four years. Under the previous legislation, these extensions were four years and two years respectively for EMAS and ISO 14001. These extensions are granted by a formal confirmation act. The ETA automatically expires if the renewal of the above EMS is not carried out in time during the extension period.

Additionally, the Project Developer must maintain a valid EMS for at least one year prior to the ETA renewal deadline. A notable provision in this article is that the new deadlines also apply to all ETAs in force at the time of the publication of this law.

Article 2: Due to the delays in issuing ETAs for new projects or activities in both Category A1 and Category A2, it became necessary to amend the existing legislative framework to simplify procedures, shorten timeframes, attract investors, and facilitate the responsible authorities. This provision shortens the deadlines at various stages of maintaining environmental permits. It is in line with EU law, which sets a minimum 30-day period for public consultation (Article 6, para. 7 of Directive 2011/92, as amended by Directive 2014/52), while also requiring the competent authority to decide within a maximum of 90 days from the submission of all required information by the project owner (Article 4, para. 6 of Directive 2011/92). Referral to KESPA or PESPA is established, as applicable, if essential opinions are delayed (e.g. forestry, archaeology, appropriate assessment for protected areas), so that the process is not derailed by the inaction of a single authority. Essential opinions are clarified as those from public authorities whose responsibilities are directly related to the characteristics of the project and its potential environmental impacts. To reduce delays caused by the submission of supplementary data, the provision clearly states that the submission of such data by the Project Developer, upon request from the competent environmental authority, is mandatory at any stage of the process but does not interrupt the deadlines. It is evident that the above changes significantly simplify the permitting process for both A1 and A2 category projects.

Article 8: This article establishes that, from 1 January 2021 onwards, the entire environmental permitting process is carried out through the Electronic Environmental Registry (EER), thus ensuring full transparency and faster processing. Specifically, the obligation to upload all documents related to the environmental permitting process on the EER is introduced. This obligation starts from 1.1.2021 and includes documents regarding the issuance, renewal, or modification of ETAs and PPAs, including applications, Environmental Impact Studies, opinions of administrative services, draft ETAs, and all relevant correspondence. Furthermore, all document transmission and public consultation processes (where required) are exclusively conducted through the EER. This digitization makes the transmission of permitting files and data faster and simpler, following the model of other European countries.

Regarding changes in the management of protected areas (CHAPTER C): Until now, protected areas in Greece have been managed by Protected Areas Management Bodies (PAMB), which are legal entities under private law.

To implement a new and modern governance system for Protected Areas, a comprehensive and unified planning framework was deemed necessary, through a scientific, advisory, and coordinating body for the effective organisation of governance and management of these areas. To this end, a unified body was established, the Organisation for Natural Environment & Climate Change Agency (NECCA), with a coordinating and executive role, collaborating with other competent authorities (Ministries, regional and local governments, environmental NGOs, civil society, local production bodies). The existing PAMB were incorporated into this Organisation as 24 Protected Area Management Units, functioning as departmental-level units responsible for implementing management plans at the local level.

Article 26: This article defines the Governance System for Protected Areas, which consists, at the national level, of the Ministry of Environment and Energy and the newly established N.E.C.C.A., as well as the Ministries of Interior, Rural Development, Digital Governance, Maritime Affairs and Island Policy, and Tourism.

At regional level, this system includes the Protected Area Management Units, Decentralised Administrations, Regional Governments, and Municipalities, supported by academic and research institutions, environmental organisations, and non-profit entities. This framework outlines the new model for managing protected areas through collaboration between all relevant stakeholders.

Article 27: Article 27 establishes the Organisation for Natural Environment and Climate Change (N.E.C.C.A.), into which the Legal Entity under Private Law named “National Centre for Environment and Sustainable Development” (EKPAΑ), established by Law 2742/1999 (GG A’ 207), is integrated. Furthermore, two departments are established: the Protected Area Management Department and the Climate Change Department. N.E.C.C.A. is responsible for implementing the policy defined by the Ministry of Environment and Energy regarding the management of protected areas in Greece, addressing climate change, and promoting and implementing sustainable development actions. Its main responsibilities include, among others: a) the central coordination for the implementation of strategies and policies related to the management of Protected Areas as well as Climate Change mitigation, b) the conduct of scientific research and the preparation of studies for all public entities within its areas of competence, c) the submission of reports and statements to international bodies in line with the country's obligations, and representation of Greece in international and European groups and committees. An important addition is the competence of N.E.C.C.A. to organise the special open-access web portal provided in paragraph 2 of Article 18 of Law 3937/2011 (GG A’ 60), through which all available information on the conservation status and protection regime of Greek biodiversity is published. This includes the collection of scientific information and reliable statistical data from all involved stakeholders, including data derived from Environmental Impact Assessments (EIAs) and Environmental Permitting Studies (EPS), which are then structured into an appropriate infrastructure of thematic and spatial databases concerning protected areas. A critical responsibility of N.E.C.C.A. is the issuance of opinions for the appropriate assessment of the impacts of any project and/or activity in the protected areas under its jurisdiction, in cases where the integrity of the area and its protected assets may be affected. This competence is activated, in accordance with paragraph 8 of Article 43, following the partial staffing of the Organisation.

Article 34: Article 34 provides the establishment of 24 Protected Area Management Units, operating at the departmental level. These Units are the evolution of the former Protected Area Management Bodies and are integrated into the hierarchical structure of N.E.C.C.A. In this way, the issue of lack of coordination among the former Management Bodies is addressed, while also serving the need to connect the Central Organisation with local structures. The management of protected areas must be carried out on two levels: a central, operational, and administrative level, and a local level. Simultaneously, with the coordination and logistical support of the Central Organisation, the Regional Units will be better positioned to participate in and attract additional funding from European Programs. Among other responsibilities, the Units are tasked with implementing and monitoring the management plans of the protected areas within their territorial jurisdiction, monitoring the species and habitat types of Community interest in these areas, and conducting consultations with local communities, production stakeholders, and any other relevant entities, whenever necessary, with the aim of integrated management, effective protection, and showcasing the values of the protected areas. They are also responsible for integrating environmental considerations into local development standards and programs, raising public and stakeholder awareness on issues related to the objectives and mission of the Management Units, organising and participating in training and education programs, as well as conferences, workshops, seminars, and other outreach events to promote and highlight

the goals of protected area management. Furthermore, they participate in local fire prevention planning within their areas of responsibility, in cooperation with the Ministry of Environment and Energy and the Ministry of Citizen Protection.

This ESIA has been prepared in line with the environmental permitting procedures of Law 4685/2020, as amended and in force.

### 5.2.2.2.3 Integration of Climate Law into Impact Assessment

The latest and very significant update on the national impact assessment framework has been Ministerial Decision ΥΠΕΝ/ΔΙΠΑ/143898/9866/2024 (GG B' 7322/31.12.2024), which serves as implementing regulation that operationalizes Article 18 of the Climate Law. This regulation modifies the content requirements of Environmental Impact Assessments (EIAs / ΜΠΕ) for Category A projects under Law 4014/2011 by bringing into force the provisions of Article 18 that included:

Article 18 introduced a new climate dimension into environmental permitting. It required EIAs to include:

1. Assessment of a project's impact on climate
  - Quantification of direct and indirect greenhouse-gas (GHG) emissions from construction and operation.
  - Assessment of how the project contributes to or affects national and EU climate objectives and the National Energy and Climate Plan (NECP/ΕΣΕΚ).
2. Assessment of climate vulnerability
  - Evaluation of how climate change (heat, flooding, drought, wildfire risk, sea-level rise, etc.) could affect the project.
  - Identification of adaptation and resilience measures.
3. Compatibility check with climate-neutrality goals
  - Examination of whether the project aligns with Greece's emissions-reduction pathway and the 2050 climate-neutrality objective.

In a nutshell, the amendment implemented Article 18 of Greece's National Climate Law by making climate mitigation and climate-resilience assessments a mandatory and structured part of Environmental Impact Assessments for major projects (Category A), thereby integrating climate considerations directly into the environmental permitting system.

Compliance with the requirements of Article 18 of Law 4936/2022, as implemented through Ministerial Decision ΥΠΕΝ/ΔΙΠΑ/143898/9866/2024, is addressed through the Project greenhouse gas assessment, climate vulnerability assessment and climate adaptation measures presented in the relevant chapters of this ESIA.

### 5.2.2.3 Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment (SEA Directive)

*Directive 2001/42/EC (SEA Directive)* establishes the framework for assessing the environmental effects of certain plans and programmes prior to their adoption, ensuring that environmental considerations are integrated into strategic decision-making. The Directive requires the preparation of an environmental report, consultation with authorities and the public, consideration of alternatives, and monitoring of environmental effects. In Greece, the Directive has been transposed through *JMD 107017/2006 (GG B' 1225/2006)*. While the Directive does not apply directly to individual offshore exploration projects, it is relevant to the strategic plans and programmes that may provide the planning framework within which such projects are developed.

### 5.2.2.4 National Legislation for Strategic Environmental Assessment (SEA)

*JMD 107017/2006 (GG B' 1225/2006)* transposes Directive 2001/42/EC (SEA Directive) into Greek legislation and establishes the national framework for the Strategic Environmental Assessment of plans and programmes likely to have significant environmental effects. The Decision sets out procedures for screening, scoping, preparation of an Environmental Report, consultation, consideration of alternatives, and environmental monitoring. Although it does not apply directly to individual offshore exploration projects, it provides the strategic environmental assessment framework for plans and programmes that may influence the development and authorisation of such projects.

Annexes I–III of *JMD 107017/2006*, establish the types of plans and programmes subject to Strategic Environmental Assessment (SEA) and the minimum content of a Strategic Environmental Impact Assessment (SEIA) Report.

Annex I of *JMD 107017/2006* identifies the plans and programmes that require a Strategic Environmental Assessment (SEA). These include operational programmes co-financed by the European Union, national and regional spatial planning frameworks, regulatory and urban development plans, integrated tourism development areas, water resources management plans, regional waste management plans, hazardous waste management plans, land reclamation and water resources development plans, and tourism port development programmes.

Annex II establishes the screening criteria for determining whether other plans and programmes require SEA. Screening applies to plans that establish a framework for future development consent of projects, define the use of small areas at the local level, constitute minor modifications to existing plans, or provide the framework for projects falling within the categories of the national environmental permitting legislation.

Annex III specifies the minimum content of the Strategic Environmental Impact Assessment (SEIA) Report. The report must include:

- a non-technical summary.
- information on the planning authority and the SEA preparer.
- the objectives of the plan or programme and its relationship with international, European Union, national, and other relevant plans and environmental objectives.
- a description of the plan or programme, including its geographical scope and the projects or activities it may enable.

- an assessment of reasonable alternatives, including the "do-nothing" scenario.
- a description of the existing environmental baseline and likely future evolution without implementation of the plan.
- identification of environmentally sensitive areas, including Natura 2000 sites.
- an assessment of the likely significant environmental effects, including direct, indirect, cumulative, synergistic, short-, medium-, and long-term, permanent and temporary, positive and adverse impacts on biodiversity, population, human health, fauna, flora, soil, water, air, climate, material assets, cultural heritage, landscape, and the interactions between these factors.
- measures to avoid, minimise, or mitigate significant adverse environmental effects;
- an environmental monitoring programme; and
- the environmental conditions and monitoring requirements to be incorporated into the environmental approval decision.

For the specific offshore exploration well, there are SEA requirements that emerge from strategic plans, programmes and regulatory documents that apply to Offshore Hydrocarbon Exploration and Exploitation Areas in the Ionian Sea area and establish the wider framework for this and other relevant neighboring projects (for example, marine spatial plans, offshore licensing plans, or regional spatial planning frameworks).

#### 5.2.2.5 Directive 2008/98/EC on Waste and Repealing Certain Directives (Waste Framework Directive)

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The Waste Framework Directive provides the primary legislative framework for the collection, transport, recovery, and disposal of waste. Waste is defined as "any substance or object which the holder discards or intends or is required to discard", while "waste treatment" is defined as "any recovery or disposal operation, including preparation prior to recovery or disposal". According to the Waste Framework Directive, a distinction must be made between:

- The temporary storage of waste pending its collection,
- The collection of waste, and
- The storage of waste pending treatment.

The Directive clarifies that installations or undertakings that merely collect waste generated by their own activities should not automatically be considered engaged in waste management and therefore do not require a separate permit for storage pending collection.

Further distinguishing between collection and treatment, it is noted that "the temporary storage of waste included in the definition of collection refers to the activity of storing waste pending its collection at facilities where it is unloaded, with the purpose of preparing it for further transport to recovery or disposal elsewhere". Regarding the objective of this Directive, a distinction must be made between temporary storage of waste pending collection and storage of waste pending treatment, depending on the type of waste, the scale and duration of storage, and the purpose of collection.



The storage of waste prior to recovery for a period of three years or more, and the storage of waste prior to disposal for a period of one year or more, are subject to Directive 1999/31/EC of the Council of 26 April 1999 on the landfill of waste.

It should be noted that Article 2, paragraph (2), point (d) of the Waste Framework Directive provides that, insofar as they are covered by other EU legislation, "waste resulting from prospecting, extraction, treatment and storage of mineral resources and the working of quarries which is covered by Directive 2006/21/EC" is excluded from the scope of the Directive. Nevertheless, according to Article 2, paragraph (2), point (b) of Directive 2006/21/EC on the management of waste from extractive industries (and amending Directive 2004/35/EC), "waste resulting from offshore prospecting, extraction and treatment of mineral resources" (emphasis added by the author) is excluded from the scope of that Directive.

As a result, since the waste produced at offshore installations (and transported onshore) is not covered by the more specific Directive concerning extractive industry waste, operators of offshore oil and gas installations must comply with the requirements of the more general Waste Framework Directive. This means that the "original waste producer or other holder" (in practice: the operator) will be required to carry out the treatment of waste themselves or to assign the treatment to a waste collector, agent, or establishment or undertaking carrying out waste treatment operations, in accordance with Articles 4 and 13 (Article 15 paragraph (1)).

The Project's waste management arrangements have been designed in accordance with the requirements of Directive 2008/98/EC, as transposed into Greek law, including application of the waste hierarchy, safe handling practices and the use of licensed waste contractors. Waste management will be implemented in accordance with the Waste Management Plan (WMP) accompanying this ESIA, which specifies the procedures for collection, temporary storage, transfer and treatment of project-generated waste.

#### 5.2.2.6 Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention)

The Convention on Environmental Impact Assessment in a Transboundary Context, commonly known as the Espoo Convention, was adopted in Espoo, Finland, on 25 February 1991 and entered into force on 10 September 1997. It establishes an international procedural framework for assessing the environmental effects of proposed activities that may cause significant adverse impacts beyond the jurisdiction of the State in which they are planned (United Nations Economic Commission for Europe [UNECE], 1991)<sup>17</sup>.

The Convention requires the Party of origin, namely the State under whose jurisdiction a proposed activity is planned, to take all appropriate and effective measures to prevent, reduce and control significant adverse transboundary environmental impacts. For activities listed in Appendix I that are likely to cause such impacts, an Environmental Impact Assessment must be undertaken before a decision is made to authorise or commence the proposed activity (UNECE, 1991, Arts. 2–3).

<sup>17</sup> United Nations Economic Commission for Europe. (1991). *Convention on environmental impact assessment in a transboundary context*. United Nations, <https://unece.org/environmental-policy/convention-environmental-impact-assessment-transboundary-context-espoo-0>

Official Journal of the European Communities. (1992). *Convention on environmental impact assessment in a transboundary context*. Official Journal of the European Communities, L 104, 7–27, [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:21992A0424\(04\)](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:21992A0424(04))



Where a proposed activity may result in significant adverse transboundary impacts, the Party of origin must notify any potentially affected Party as early as possible and no later than the time at which its own public is informed. The notification should include information on the proposed activity, the nature of the possible decision and a reasonable timeframe within which the affected Party may indicate whether it intends to participate in the environmental assessment procedure (UNECE, 1991, Art. 3).

The Convention also requires the authorities and the public in the areas likely to be affected to be informed and given an opportunity to comment on the proposed activity and its potential environmental effects. The Party of origin must ensure that the public of the affected Party is provided with opportunities equivalent to those available to its own public. Comments submitted by the affected Party's authorities and public must be transmitted to the competent authority of the Party of origin before the final decision is taken (UNECE, 1991, Arts. 2–4).

Following the preparation and distribution of the Environmental Impact Assessment documentation, the Parties concerned must enter consultations without undue delay. These consultations may address possible alternatives, measures to avoid, reduce or mitigate significant adverse transboundary impacts, environmental monitoring and other forms of cooperation relating to the proposed activity. The Parties must agree on a reasonable timeframe for the duration of the consultation process (UNECE, 1991, Art. 5).

The final decision on the proposed activity must take due account of the Environmental Impact Assessment documentation, the comments received from the affected Party's authorities and public and the outcome of the transboundary consultations. The Party of origin must provide the affected Party with the final decision and the reasons and considerations on which it was based. Where material new information becomes available before the activity commences, the Parties may consult on whether the decision should be reviewed or revised (UNECE, 1991, Art. 6).

The Convention also provides for post-project analysis where the Parties concerned consider it necessary. Such analysis may be used to monitor compliance with the conditions attached to the authorisation, review the effectiveness of mitigation measures, verify impact predictions and identify any unforeseen significant adverse transboundary impacts. Where post-project analysis identifies an impact that may result in a significant adverse transboundary effect, the Parties must consult on the measures required to reduce or eliminate that impact (UNECE, 1991, Art. 7).

The ESIA has been prepared in a manner consistent with the principles of the Espoo Convention and includes the identification, assessment and management of potential environmental and social impacts, including those that could extend beyond national boundaries. Given the offshore and onshore setting of the Project, the ESIA has considered potential transboundary impact pathways, including effects on the marine environment, biodiversity, fisheries, navigation, air emissions and accidental events.

The ESIA includes screening and assessment of potential transboundary impacts and supports the application of the Espoo Convention procedures where significant transboundary effects are identified by the competent authorities.

According to the ESIA, normal operations are not expected to cause significant transboundary effects, and only rare, high-impact accident scenarios could lead to such impacts. These scenarios have been identified and assessed, and their possible cross-border effects have been considered in the impact assessment and in the Project's emergency response and oil spill contingency plans. Where screening indicates the likelihood of significant transboundary effects, or where a potentially affected State requests participation, the relevant

authorities will apply the formal transboundary notification and consultation procedure in line with the Espoo Convention and the EU ESIA Directive. This approach ensures that affected States and their public have timely access to ESIA documentation and a genuine opportunity to comment before final decisions are made.

## 5.2.3 Legislative framework for the prevention of marine pollution

### 5.2.3.1 Directive on the safety of offshore oil and gas operations (2013/30/EU)

Following the Deepwater Horizon incident in the Gulf of Mexico in April 2010, the European Commission expressed its initial views on the safety of offshore oil and gas operations in its communication entitled "Facing the Challenge of the Safety of Offshore Oil and Gas Activities" (published on 13 October 2010).

The European Commission's communication concluded that the existing divergent and fragmented regulatory framework governing the safety of offshore oil and gas operations in Europe, as well as the recent safety practices within the industry, did not sufficiently ensure the minimization of risks from offshore accidents across the Union.

On 28 June 2013, the European Commission published the Offshore Safety Directive. The purpose of this Directive is to reduce as much as possible the occurrence of major accidents related to offshore oil and gas operations and to limit their consequences.

According to Directive 2013/30/EU, the EU has established a set of rules, as summarized below, to help prevent accidents as well as to ensure a prompt and effective response in the event of an incident.

- Before commencing exploration or production, companies must prepare a Report on Major Hazards (RoMH) for their offshore installation. This report must include a risk assessment and an emergency response plan.
- Companies must ensure the availability of the necessary resources so that they can be deployed if needed.
- When granting licenses, EU countries must ensure that companies are financially sound and possess the necessary technical expertise.
- Operators' drilling programs and designs must be independently verified to ensure the required safety levels. This verification must take place before drilling operations commence.
- National Authorities must verify compliance with safety regulations, environmental protection measures and the preparedness of both production and non-production facilities for emergency situations. If companies fail to meet the minimum standards, EU countries may impose sanctions, including the suspension of operations.
- Information regarding how companies and EU countries maintain the safety of installations should be made available to the public.
- Companies will bear full responsibility for any environmental damage caused to protected marine species and natural habitats.

To further promote offshore safety, the European Commission collaborates with its international partners on implementing the highest safety standards worldwide. Inspectors of offshore installations from EU countries

also cooperate with the European Union Offshore Oil & Gas Authorities Group (EUOAG) to exchange best practices and improve standards.

The Asopus-1 exploration well has been planned in accordance with Directive 2013/30/EU, implemented in Greece via Law 4409/2016. This involved the preparation of a Report on Major Hazards, a Notification of Well Operations, a Safety and Environmental Management System, and project-specific emergency and oil spill response plans. Along with the Quantitative Risk Assessment (ORA) in Chapter 9, the Emergency Response Plan (ERP), which will be formally submitted to the regulatory authority(ies) for approval as required, illustrate how major accident risks and pollution prevention are addressed for the Project.

### 5.2.3.2 National Law 4409/2016 for the framework for safety in offshore hydrocarbon exploration and exploitation operations, transposition of Directive 2013/30/EU, amendment of Presidential Decree 148/2009, and other provisions

Directive 2013/30/EU on the safety of offshore oil and gas operations is transposed into Greek law primarily through Law 4409/2016 (GG A' 136/28.07.2016) "Framework for safety in offshore hydrocarbon exploration and exploitation operations, transposition of Directive 2013/30/EU, amendment of Presidential Decree 148/2009, and other provisions", which establishes a comprehensive offshore safety and environmental risk management regime for hydrocarbon activities in Greek waters. This law introduces detailed requirements for operators of offshore installations, including the obligation to prepare and submit major hazard reports, implement certified safety and environmental management systems, conduct systematic risk assessments, and maintain fully operational emergency response and oil spill contingency plans. It also establishes stricter rules for the design, construction, operation, and decommissioning of offshore facilities, ensuring that all activities are subject to continuous technical oversight and preventive safety controls aimed at avoiding major accidents. On the institutional level, the law strengthens the role of the national competent authority (today the Hellenic Hydrocarbon and Energy Resources Management Company – HEREMA / ΕΔΕΥΕΠ) as the designated offshore safety competent authority responsible for licensing safety documentation, conducting inspections, monitoring compliance, and enforcing corrective measures where necessary. It further requires financial capability and liability coverage from operators to ensure that any environmental damage or industrial accident can be adequately addressed. In combination with Law 2289/1995, which establishes the State ownership of hydrocarbons and the concession-based exploration and production system, and Law 4001/2011, which modernises energy market regulation and institutional supervision, Law 4409/2016 completes the regulatory architecture by embedding EU-level offshore safety standards into Greek hydrocarbons law. The result is a multi-layered legal system in which exploration and production rights are granted under strict environmental, technical, and safety conditions, with continuous State oversight and full alignment with the requirements of Directive 2013/30/EU, particularly regarding accident prevention, operator accountability, and protection of marine ecosystems.

The proposed Asopus-1 exploration well has been planned in accordance with Law 4409/2016, which transposes Directive 2013/30/EU, and includes Major Hazard Report / NoWO submissions, a Safety and Environmental Management System, and project-specific emergency response and oil spill contingency plans. It is therefore considered consistent with the Directive's safety and environmental requirements.

### 5.2.3.3 Water Framework Directive (WFD) 2000/60/EC

The Water Framework Directive (Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000) was adopted to establish a framework for Community action in the field of water policy. Member States commit to achieving good qualitative and quantitative status of their waters (including marine waters up to 1 nautical mile from the coast). It is considered a framework directive because it outlines the necessary steps to reach a common objective, rather than adopting the more traditional approach of fixed limit values. The Directive aims to achieve “Good” overall status for all groundwater and surface waters (rivers, lakes, transitional and coastal waters) within the EU. The WFD integrates qualitative, ecological, and quantitative objectives for the protection of aquatic ecosystems and the good status of all water resources, introducing the concept of integrated management at the scale of River Basin Districts (RBDs).

Furthermore, it redefines the concept of the RBD to include inland surface waters (rivers, lakes), groundwater, transitional (deltas, river estuaries), and coastal ecosystems. The ecological and chemical status of surface water bodies is assessed based on the following criteria:

- **Biological** quality elements (such as fish fauna, benthic invertebrates, and aquatic flora).
- **Hydromorphological** quality elements, including features like riverbank structure or the substrate of the riverbed.
- **Physicochemical** quality elements, such as temperature conditions, dissolved oxygen levels, and nutrients.
- **Chemical quality**, referring to Environmental Quality Standards (EQS) for specific pollutants within a river basin. These standards define maximum allowable concentrations for certain substances. If even one of these limits is exceeded, the water body cannot be classified as having “good ecological status.”

The standards and threshold values define the applicable classes for each quality characteristic and are set out in the WFD Guidelines (2016). In addition, Article 6 of the WFD requires the establishment of a register or registers of all areas within River Basin Districts (RBDs) that are designated as areas of special protection under specific Union legislation, either for the protection of surface and groundwater or for the conservation of habitats and species directly dependent on water. The WFD was amended by Directive 2008/105/EC concerning environmental quality standards in the field of water policy.

The harmonization of national legislation with the Water Framework Directive (WFD) was achieved through Law 3199/2003, Presidential Decree 51/2007, and JMD H.Π. 51354/2641/E103/2010. The provisions of this legislation incorporate the core principles of the WFD, defining the administrative structure and responsibilities of the involved parties at both national and regional levels. Within this framework, the competent authority (General Directorate for Water of the Ministry of Environment and Energy) has approved the 2nd Revision of the River Basin Management Plans (RBMPs) for the 14 River Basin Districts of the country, in accordance with the WFD and national legislation.

The study area that is associated with the onshore facilities falls within Water Districts EL05 "Epirus" where the 2nd Revision of the River Basin Management Plan (RBMPs) for this district was approved by GG A 71/17.05.2024. Based on the proposed mitigation measures and environmental monitoring programme (Chapters 12 and 13), the Project is not expected to cause deterioration in the status of water bodies in Water District EL05 'Epirus' and is considered consistent with the objectives of the Water Framework Directive and the 2nd Revision of the RBMP for this district.

#### 5.2.3.4 Marine Strategy Framework Directive (MSFD), 2008/56/EC

The Marine Strategy Framework Directive (Directive 2008/56/EC) was adopted on 17 June 2008 after many years of preparation and extensive consultation with all stakeholders and the public, and it came into force on 15 June 2008. The Directive aims to achieve **Good Environmental Status (GES)** of the EU's marine waters by 2020 and to protect the resources on which marine economic and social activities depend. It is the EU's first legal instrument related to the protection of marine biodiversity, as it includes the specific regulatory objective of “maintaining biodiversity by 2020” as a cornerstone for achieving Good Environmental Status in marine waters. The Directive establishes within a legislative framework the ecosystem-based approach to managing human activities that impact the marine environment, integrating the concepts of environmental protection and sustainable use. To achieve its objective, the Directive establishes European marine regions and subregions based on geographic and environmental criteria. Specifically, the Directive distinguishes four European marine regions – the Baltic Sea, the Northeast Atlantic Ocean, the Mediterranean Sea, and the Black Sea – all located within the geographic boundaries of existing regional sea conventions. Cooperation among Member States within a marine region, as well as with neighboring countries sharing the same marine waters, already takes place through these Regional Sea Conventions.

To achieve Good Environmental Status (GES) by 2020, each Member State (MS) is required to develop a strategy for its marine waters (Marine Strategy). Furthermore, since the Directive follows an adaptive management approach, Marine Strategies must be updated and revised every 6 years. In this context, the Commission developed a set of detailed criteria and methodological standards to assist Member States in implementing the MSFD. These criteria and methodological standards were revised in 2017, leading to the new Commission Decision on Good Environmental Status. Annex III of the Directive was also amended in 2017 (Directive 2017/845/EU) to better link the components of ecosystems, anthropogenic pressures, and impacts on the marine environment with the 11 qualitative descriptors of the MSFD and the new decision on Good Environmental Status.

#### 5.2.3.5 Law 3983/2011 for the National Strategy for the Protection and Management of Marine Environment - Harmonization with Directive 2008/56/EC

The MSFD was incorporated into national legislation through Law 3983/2011, as amended by JMD YPEN/DNEP/50529/2779/2018 (amending Annex III in accordance with Directive 2017/845/EU), which established the following qualitative descriptors for determining Good Environmental Status (GES) in the waters of the marine sub-region of the Aegean Sea – Eastern Mediterranean (Levantine Sea):

1. Biodiversity is maintained. The quality and extent of habitats, as well as the distribution and abundance of species, are consistent with prevailing physiographic, geographic, and climatic conditions.
2. The introduction of non-indigenous species due to human activities occurs at levels that do not adversely alter ecosystems.
3. Populations of all commercially exploited fish, mollusks, and crustaceans are within biologically safe limits.

4. All elements of the marine food webs, to the extent that they are known, exist in conditions of normal abundance and diversity, and at levels capable of ensuring the long-term abundance of species and the maintenance of their full reproductive capacity.
5. Anthropogenic eutrophication is minimized.
6. The integrity of the seabed is such that the structure and functions of ecosystems are ensured, with benthic ecosystems not being negatively affected.
7. Permanent alteration of hydrographic conditions does not adversely affect marine ecosystems.
8. Pollutant concentrations are at levels that do not cause impacts.
9. Pollutants in fish and other seafood intended for human consumption do not exceed the limits set by Community legislation or other equivalent standards.
10. The properties and quantities of waste in the sea do not cause harm to the coastal and marine environment.
11. The import of energy, including underwater noise, is at levels that do not adversely affect the marine environment.

The corresponding Environmental Objectives and Indicators for each qualitative descriptor parameter were established through JMD 1175/2012 (see the following table), while JMD 142569/2017 established the Programme of Measures for achieving or maintaining Good Environmental Status (GES) in accordance with Article 12 of Law 3983/2011.

**Table 5-7: National Environmental Objectives for achieving Good Environmental Status (GES) in the marine sub-region of the Aegean Sea – Eastern Mediterranean (Levantine Sea) within the framework of the MSFD (JMD 1175/2012)**

| QUALITATIVE DESCRIPTOR PARAMETER | ENVIRONMENTAL OBJECTIVES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1</b>                         | <p>Conservation of the population of the Mediterranean monk seal (<i>Monachus monachus</i>) in Greek waters.</p> <p>Census of the population of the loggerhead sea turtle (<i>Caretta caretta</i>) breeding on Greek coasts and conservation of nesting areas.</p> <p>Conservation and mapping of <i>Posidonia oceanica</i> seagrass meadows.</p> <p>Census of the extent occupied by biogenic sediments of the Maerl type.</p> <p>Conservation of benthic macrofauna communities and the structure of planktonic communities.</p> |
| <b>2</b>                         | Census of invasive alien species and their environmental impacts on marine ecosystems.                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>3</b>                         | <p>Monitoring of the indicators “Fishing Mortality” (F/F<sub>msy</sub>) and “Spawning Biomass” (B/B<sub>msy</sub>) for representative benthopelagic species.</p> <p>Monitoring of the “Fishing Exploitation” indicator for representative pelagic species.</p> <p>Correlation of fishing activities with the established indicators.</p>                                                                                                                                                                                           |
| <b>4</b>                         | Monitoring and assessment of the biomass balance at higher trophic levels relative to the total catch of benthopelagic fish.                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>5</b>                         | <p>Reduction of organic load and nutrients entering the marine environment from point and non-point sources.</p> <p>Reduction of nitrate pollution from agricultural activities.</p>                                                                                                                                                                                                                                                                                                                                               |
| <b>6</b>                         | <p>Mapping of sensitive benthic habitats.</p> <p>Maintenance of the balance of benthic macrofauna.</p>                                                                                                                                                                                                                                                                                                                                                                                                                             |



| QUALITATIVE DESCRIPTOR PARAMETER | ENVIRONMENTAL OBJECTIVES                                                                                                                                                              |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7                                | Prevention of environmental impacts from locally occurring, anthropogenic permanent alterations of hydrographic conditions.                                                           |
| 8                                | Specification of the impacts of pollutants and determination of prevailing concentration trends of these substances in the water column, sediments, marine organisms, and ecosystems. |
| 9                                | Maintenance of pollutant levels in fish and other seafood intended for human consumption within permissible limits.                                                                   |
| 10                               | Reduction of anthropogenic waste on the coasts and in the marine environment.                                                                                                         |
| 11                               | Control of energy levels to prevent adverse effects on the marine environment.                                                                                                        |

According to Article 11 of the MSFD, Greece is obliged to present a set of monitoring activities (monitoring programs) in its marine territorial waters to meet the requirements of the 11 parameters of Good Environmental Status (GES).

Monitoring programs under the MSFD framework are a combination of new and existing monitoring activities derived from other legal obligations of Member States (MS), such as monitoring of marine areas within the Natura 2000 network for the implementation of the Habitats and Birds Directives (HD and BD), monitoring of coastal water bodies under the Water Framework Directive (WFD), and the Data Collection Framework for Fisheries (DCF - COM 199/2008) for the implementation of the EU Common Fisheries Policy regulations (COM 1380/2013).

Based on the proposed mitigation measures and the environmental monitoring programme in Chapters 11 and 12, the Project is not expected to compromise Good Environmental Status (GES) in the affected marine area and is considered consistent with the objectives and provisions of Law 3983/2011, which transposes the MSFD.

### 5.2.3.6 Environmental Liability Directive (ELD) (2004/35/EC)

The Environmental Liability Directive (ELD) 2004/35/EC came into force in 2009. Unlike Directive 96/82/EC (Seveso II Directive), which applies to large high-risk installations, the Environmental Liability Directive applies to operators of certain occupational activities, regardless of company size, including those active in the energy sector, as defined in Annex III of the Directive.

The ELD defines environmental damage as:

- Damage that significantly affects the environmental (ecological, chemical, or quantitative) status of water resources, as defined in the EU Water Framework Directive and the Marine Strategy Framework Directive
- Damage to soil, which creates a serious risk to human health.
- Damage to protected species and natural habitats, which negatively impacts their conservation status, as defined in the Birds Directive and the Habitats Directive.

The above definition of environmental damage, as outlined in the Environmental Liability Directive (ELD)



2004/35/EC, includes the emission of pollutants into the atmosphere, as these can affect the condition of soil or water bodies. It also encompasses discharges into inland surface waters, groundwater, and any deliberate release of genetically modified organisms (GMOs) into the environment, in accordance with Directive 2001/18/EC.

The ELD applies to waters governed by the Water Framework Directive 2000/60/EC, which defines "surface waters" to include territorial waters. Consequently, environmental liability may be assigned for any damage occurring within 12 nautical miles from the coastline.

However, there are specific exceptions to the scope of this directive. These include environmental damage caused by armed conflicts or natural disasters, as well as types of damage already covered by international conventions (such as marine pollution). Furthermore, nuclear risks fall outside the ELD's remit, as they are regulated under the Euratom Treaty.

Regarding preventive and remedial actions, the Environmental Liability Directive (ELD) establishes the following obligations:

- If there is an imminent threat of environmental damage, the operator must immediately take the necessary preventive measures.
- If damage has already occurred, the operator is required to promptly notify the competent authorities and take appropriate actions to manage the situation. This includes preventing further environmental harm and risks to human health, as well as implementing suitable remediation measures to restore the affected environment.

The Environmental Liability Directive (ELD) was amended by Directives 2006/21/EC, 2009/31/EC, 2013/30/EU and Regulation 2019/1010. It was transposed into national legislation through Presidential Decree 148/2009.

The Project has been designed and assessed in accordance with the requirements of the Environmental Liability Directive, as transposed into Greek law through Presidential Decree 148/2009. This includes measures to prevent significant environmental damage and procedures for notification, control and remediation should such damage occur. The Project is therefore considered consistent with the requirements of the Directive.

#### 5.2.3.7 Directive 2009/123/EC, which amends Directive 2005/35/EC on ship-source pollution and the introduction of penalties, including criminal penalties for infringements, aims to strengthen the legal framework addressing illegal discharges of polluting substances

The purpose of the Directive was to incorporate international standards on ship-source pollution into EU law and to ensure that those responsible for the discharge of polluting substances are subject to appropriate penalties, including criminal sanctions. The aim is to improve maritime safety and to strengthen the protection of the marine environment from ship-generated pollution. The Directive does not prevent Member States from adopting stricter measures against ship-source pollution, provided they are consistent with international law. According to Article 3 of the Directive, it applies—in accordance with international law—to the discharge of polluting substances in:

- Internal waters of a Member State, including ports, to the extent that the MARPOL regime applies,

- Territorial waters of a Member State
- Straits used for international navigation and subject to the regime of transit passage, as defined in Part III, Section 2 of the 1982 United Nations Convention on the Law of the Sea, provided that these straits fall under the jurisdiction of a Member State,
- the exclusive economic zone or equivalent zone of a Member State, established in accordance with international law and
- the high seas.

The Directive applies to discharges of polluting substances from any ship, regardless of flag, except for warships, auxiliary warships, or other government-owned or operated ships used temporarily only for governmental, non-commercial purposes. Member States must ensure that discharges of polluting substances from ships, including minor cases of such discharges, in any of the aforementioned areas, are considered violations when committed intentionally, through conscious negligence, or gross negligence. Each Member State shall take the necessary measures to ensure that any natural or legal person who has committed an infringement as defined in Article 3 paragraph 1 can be held responsible. The discharge of polluting substances in any of the aforementioned areas shall not be considered an infringement if it meets the conditions specified in Annex I, Regulations 15, 34, 4.1 or 4.3, or in Annex II, Regulations 13, 3.1.1 or 3.1.3 of MARPOL 73/78. The discharge of polluting substances in areas (c), (d), and (e) shall not be considered an infringement for the shipowner, the master, or the crew, provided that it meets the conditions of Annex I, Regulation 4.2 or Annex II, Regulation 3.1.2 of MARPOL 73/78.

The Directive was incorporated into national legislation through Law 4037/2012.

The Project's vessel operations are designed to prevent illegal ship-source discharges, in line with MARPOL and Greek legislation implementing Directive 2005/35/EC and 2009/123/EC.

### 5.2.3.8 The Bathing Water Directive (2006/7/EC)

The Bathing Water Directive was initially enacted in 1975, and its main objective is to ensure public health and protect the aquatic environment of coastal and inland areas from pollution. Bathing waters can be coastal or inland (rivers, lakes), and they are subject to the Directive, its mandatory quality standards, and associated monitoring and information requirements only where bathing is expressly authorized or, although not prohibited, is traditionally practiced by a large number of people. The bathing season in the EU generally extends from late May to late September. The original Directive was replaced by the new Bathing Water Directive 2006/7/EC, which updates the measures of the 1975 legislation and simplifies management and monitoring methods. The new directive also provides a more proactive approach to informing the public about water quality by using four quality categories for bathing waters: "poor," "sufficient," "good," and "excellent".

The new Bathing Water Directive was incorporated into national legislation through JMD 8600/416/E103/2009 for the management of bathing waters, in compliance with the provisions of Directive 2006/7/EC. Within this framework, the competent Special Secretariat for Waters (SSW/MEECC) created the Register of Bathing Beaches to describe and present the main characteristics of bathing beaches, identify sources of pollution that may affect the quality of bathing waters, and assess the extent of these

impacts. The Register also serves as a guide for selecting appropriate measures to minimize pressures on bathing waters and to manage resources more effectively.

The Asopus-1 exploration well is located offshore, away from designated bathing waters, and is not expected to affect bathing water quality. The applicable provisions of the Bathing Water Directive, as implemented in Greek legislation, have been considered in the assessment of potential coastal water impacts.

### 5.2.3.9 Convention for the protection of the mediterranean sea against pollution (Barcelona Convention)

The Convention for the Protection of the Mediterranean Sea against Pollution (Barcelona Convention) was adopted on February 16, 1976, during a conference of Mediterranean coastal states held in Barcelona. During this conference, two Protocols were adopted aimed at preventing pollution from ships and aircraft (dumping) and at cooperation to combat pollution in emergency situations. These legal instruments came into force on February 12, 1978. The Convention also provided for the establishment of additional legal tools and was soon supplemented by the Protocol on Pollution from Land-Based Sources (1980), the Protocol on Specially Protected Areas (1982), and the Offshore Protocol (1994).

The main objectives of the Convention are:

- The assessment and control of marine pollution.
- The assurance of sustainable management of natural marine and coastal resources
- The integration of the environment into economic and social development.
- The protection of the marine environment and coastal zones through the prevention and reduction of pollution, and, as far as possible, the elimination of pollution, whether of marine or land-based origin.
- The protection of natural and cultural heritage.
- The strengthening of solidarity among the coastal States of the Mediterranean.
- The contribution to the improvement of quality of life.

In 1995, the Contracting Parties adopted significant amendments to the 1976 Convention, which was renamed the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean and came into force in 2004. Additionally, in 1995, the Contracting Parties adopted the Action Plan for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Mediterranean Action Plan – MAP, Phase II), replacing the original MAP adopted in 1975. The Barcelona Convention activated a total of seven Protocols concerning specific aspects of Mediterranean environmental conservation, complementing the legal framework of the MAP. These are:

- Dumping Protocol: Protocol for the prevention of pollution of the Mediterranean from the dumping of waste and other materials from ships and aircraft (approved in 1976, amended in 1995, and its amendments have not yet entered into force).
- Protocol for Land-Based Sources (LBS Protocol): (including Regional Plans under Article 15 of the LBS), which entered into force in 2011: Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources and Activities, which entered into force in 1980 and was amended in 1996, with the amendment entering into force in 2008. Regional Plans were also adopted under the LBS Protocol for the reduction or elimination of substances or their loads, as well as marine litter.

- SPA Protocol: Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean (SPA Protocol), adopted in 1995, replacing the corresponding protocol of 1982, along with its Annexes (as adopted in 1996 and amended in 2009, 2012, and 2013).
- Prevention and Emergency Protocol: Protocol on Cooperation in Preventing Pollution from Ships and, in Cases of Emergency, Combating Pollution of the Mediterranean Sea (Prevention and Emergency Protocol), adopted in 2002, replacing the corresponding 1976 Protocol, and entered into force in 2004.
- Offshore Protocol: Protocol for the Protection of the Mediterranean Sea against Pollution Resulting from Exploration and Exploitation of the Continental Shelf, the Seabed, and its Subsoil (Offshore Protocol), adopted in 1994 and entered into force in 2011.
- Hazardous Waste Protocol: Protocol on the Prevention of Pollution of the Mediterranean Sea by Transboundary Movements of Hazardous Wastes and their Disposal (Hazardous Waste Protocol), adopted in 1996 and entered into force in 2011.
- ICZM Protocol: Protocol on Integrated Coastal Zone Management in the Mediterranean (ICZM Protocol), adopted in 2008.

On 17 December 2012, the Council approved the EU's accession to the Offshore Protocol, thereby underlining the EU's commitment to reducing the environmental impacts of offshore activities in the Mediterranean through effective regional cooperation. This decision made the Offshore Protocol binding on the European Union and its institutions and strengthened the link between regional Mediterranean obligations and the EU's offshore safety and environmental framework.

The Barcelona Convention, its amendments, and the associated Protocols were ratified by Greece through Laws 855/1978, 1634/1986, 3022/2002 and 3497/2006.

The Asopus-1 Project has been developed in line with the relevant provisions of the Barcelona Convention and its Protocols, as implemented in Greek legislation, through its ESIA, permitting and project design measures.

#### 5.2.3.9.1 The Protocol for the protection of the mediterranean sea against pollution resulting from exploration and exploitation of the continental shelf and the seabed and its subsoil (Offshore Protocol)

The *Protocol for the Protection of the Mediterranean Sea against Pollution Resulting from Exploration and Exploitation of the Continental Shelf and the Seabed and its Subsoil* (Offshore Protocol) to the Barcelona Convention, is a key regional legal instrument governing offshore oil and gas activities in the Mediterranean. Adopted in 1994 and in force since 2011, it establishes a comprehensive regulatory framework aimed at preventing, reducing, controlling, and, where possible, eliminating pollution arising from offshore exploration and exploitation activities. The Protocol requires Contracting Parties to ensure that all offshore operations are subject to prior written authorization, granted only after demonstration of the operator's technical competence, financial capacity, and compliance with stringent environmental and safety requirements, including the preparation of detailed Environmental Impact Assessments (EIAs). It incorporates fundamental environmental law principles such as the precautionary principle, the polluter-pays principle, and the application of Best Available Techniques (BAT) and Best Environmental Practices (BEP).

In relation to drilling fluids and cuttings, the Protocol sets out specific obligations for the controls and authorization of the use and discharge of drilling muds and associated cuttings, recognizing them as a significant source of marine pollution. Operators are required to minimize their environmental impact through the use of less harmful substances, appropriate discharge controls and, where required, monitoring of discharges and their composition.

The Protocol further addresses transboundary pollution, reflecting the semi-enclosed nature of the Mediterranean Sea. Contracting Parties are obligated to ensure that activities under their jurisdiction do not cause pollution damage to other States or areas beyond national jurisdiction. This includes requirements for prior assessment of potential cross-border impacts within the EIA process, information exchange, and notification procedures where there is a risk of transboundary effects.

In the context of emergency situations, the Protocol establishes obligations for preparedness and mutual assistance among Mediterranean States. Operators must develop and maintain contingency plans for incidents such as oil spills or blowouts, while States are required to cooperate and provide assistance in response to emergencies. This includes prompt notification of affected or potentially affected States, coordination of response actions, and collaboration through regional mechanisms such as the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC).

More broadly, the Protocol imposes strict operational controls to limit discharges of oil and hazardous substances, mandates continuous environmental monitoring and reporting, and requires the protection of sensitive ecosystems and designated marine protected areas. It also establishes liability and compensation provisions for environmental damage, as well as obligations for the safe decommissioning and removal of offshore installations. Within an EIA legislative framework, the Offshore Protocol provides the legal basis for evaluating environmental risks, addressing transboundary considerations, defining mitigation measures, and ensuring that offshore activities are conducted in accordance with internationally recognized standards for environmental protection in the Mediterranean region.

The Offshore Protocol to the Barcelona Convention was incorporated into Greek law through its ratification by the Hellenic Republic, thereby making its provisions legally binding at the national level. Greece ratified the Protocol by virtue of Law 4001/2011 (GG A' 179/22.08.2011), which primarily regulates the functioning of energy markets, including hydrocarbons exploration and exploitation, and includes provisions for the adoption of relevant international obligations. Through this law, Greece formally accepted the Offshore Protocol, aligning its domestic legal framework with the Protocol's requirements for environmental protection and safety in offshore oil and gas activities.

In addition, the implementation of the Protocol in Greece is supported by subsequent regulatory acts and environmental legislation, notably Law 1650/1986 (as amended), which establishes the general framework for environmental protection, including Environmental Impact Assessment (EIA) procedures, and Law 4409/2016, which transposes Directive 2013/30/EU on the safety of offshore oil and gas operations. Together, these instruments ensure that the obligations arising from the Offshore Protocol—such as control of discharges (including drilling fluids and cuttings), prevention of transboundary pollution, emergency preparedness and mutual assistance, and operator liability—are effectively integrated into the Greek legal and regulatory system.

As a result, within the context of an EIA in Greece, the Offshore Protocol is not applied in isolation but operates as part of a broader, harmonized legal framework combining international commitments, EU law, and national legislation, all of which must be considered when assessing offshore hydrocarbon projects.

**Table 5-8: Project Compatibility with the Offshore Protocol**

| ARTICLE        | REQUIREMENT                                                         | ASOPUS-1 COMPLIANCE ASSESSMENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>5</b>       | <b>Requirements for Authorizations</b>                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>5.1</b>     | Environmental assessment of proposed activities                     | <p><b>Compliant.</b> Prior to finalising the well location, environmental and geohazard surveys were undertaken to confirm the suitability of the proposed drilling site and identify any environmental, geological or anthropogenic constraints. These included an Environmental Baseline Survey (EBS), a high-resolution seabed survey and an independent shallow hazards assessment, conducted in accordance with Greek regulatory requirements, including Ministerial Decision 170225/2014 (Government Gazette B' 135/27.01.2014), and recognised Good International Industry Practice (GIIP).</p> <p>The surveys were designed to identify potential seabed features, shallow geohazards, sensitive environmental receptors and any anthropogenic objects that could affect drilling safety or require mitigation measures. The results confirmed that the proposed Asopus-1 well location is free from significant environmental or geotechnical constraints, presents a low risk of shallow drilling hazards, and is suitable for the planned exploration drilling activities.</p> |
| <b>5.2</b>     | Definition of geographical area and safety zones                    | <p><b>Compliant.</b> The drilling location and associated offshore operational area have been defined. A 500 m safety zone will be established around the MODU.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>5.3</b>     | Professional and technical qualifications                           | <p><b>Compliant.</b> Offshore personnel are required to hold relevant certifications and competency qualifications appropriate to their role. Drilling personnel are trained in accordance with recognised offshore industry requirements.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>5.4-5.7</b> | Safety measures, contingency planning, monitoring and removal plans | <p><b>Compliant.</b> Safety measures, emergency response procedures, environmental monitoring requirements and abandonment arrangements are incorporated within the Project HSE Management System, Emergency Response Plan (ERP), NoWO and supporting management plans.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>5.8</b>     | Protection of specially protected areas                             | <p><b>Compliant.</b> The proposed well location is not situated within a designated protected area. Potential impacts on protected habitats and species have been assessed in the ESIA.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>5.9</b>     | Financial security and insurance                                    | <p><b>Compliant</b> – Achieved through the maintenance of appropriate insurance and financial assurance arrangements in accordance with applicable regulatory requirements.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>8</b>       | <b>General Obligation</b>                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>8.1</b>     | Application of BAT and internationally accepted standards           | <p><b>Compliant.</b> The Project applies BAT and GIIP through use of WBMs, closed-loop mud circulation, well integrity barriers, emissions controls, waste minimisation and pollution prevention measures (Section 5.4).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>9</b>       | <b>Harmful or noxious substances and materials</b>                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>9.1-9.3</b> | Approval, description and control of chemicals                      | <p><b>Compliant.</b> Chemicals are managed through the Chemical Use Plan (CUP). Safety Data Sheets are maintained, chemical inventories are controlled and chemicals are handled, stored and transported in accordance with approved procedures (Section 6.7.1).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>9.4-9.6</b> | Disposal of harmful or noxious substances                           | <p><b>Compliant.</b> The Project primarily uses lower-hazard drilling chemicals and WBMs. No substances prohibited under Annex I have been identified in the chemical inventory or are proposed for discharge.. Hazardous materials requiring special permits are not planned for discharge (Section 6.9.1.1).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>10</b>      | <b>Oil and oily mixtures and drilling fluids and cuttings</b>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>10.1</b>    | Oil and oily mixtures                                               | <p><b>Compliant.</b> No oil-based or synthetic-based mud system is proposed (Section 6.7.1.1). The vessel's oily waste is collected, managed onboard and transferred to authorised reception facilities in accordance with MARPOL requirements (Section 6.8.1.8).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |



| ARTICLE   | REQUIREMENT                                             | ASOPUS-1 COMPLIANCE ASSESSMENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10.2      | Drilling fluids and cuttings                            | <b>Compliant.</b> The Project uses WBM only (Section 6.7.1.1). Cuttings dispersion modelling has been undertaken. Hydrocarbon-contaminated cuttings, if any, will be contained and transported to shore for treatment and disposal (Section 6.9.1.1). Drilling fluid management and discharge practices are governed by permit conditions, operational procedures and applicable regulatory requirements.                                                                                                                                                                                                                                                                                                                                               |
| 11        | <b>Sewage</b>                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 11.1–11.5 | Sewage management                                       | <b>Compliant.</b> Sewage generated onboard the MODU will be treated and managed in accordance with MARPOL requirements. Discharges will comply with applicable international standards and operational controls (Section 6.8.1.7).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 12        | <b>Garbage</b>                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 12.1      | Disposal of plastics and non-biodegradable garbage      | <b>Compliant.</b> Plastics and other prohibited garbage will not be discharged. Waste will be segregated and transferred to licensed shore reception facilities (Section 6.9.1.2).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 12.2      | Food waste disposal                                     | <b>Compliant.</b> Food waste management will follow MARPOL requirements and applicable offshore waste procedures (Section 6.9.1.3).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 12.3      | Mixed waste streams                                     | <b>Compliant.</b> Waste segregation procedures ensure that the most stringent disposal requirements are applied where waste streams are mixed (Section 6.9.1.2).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 13        | <b>Reception facilities, instructions and sanctions</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 13.1      | Reception facilities and waste disposal arrangements    | <b>Compliant.</b> Offshore waste will be transferred to authorised waste management contractors and licensed facilities through the logistics base at the Port of Igoumenitsa. Personnel receive waste management instructions and procedures (Section 6.9.2).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 14        | <b>Exceptions</b>                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 14.1–14.3 | Exceptions and emergency discharges                     | <b>Compliant.</b> Any emergency discharge scenarios are addressed through the ERP and incident reporting procedures. Emergency actions would be subject to regulatory notification requirements (Section 6.6.7).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 15        | <b>Safety measures</b>                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 15.1      | Safety measures for design and operation                | <b>Compliant.</b> The well has been designed in accordance with recognised industry standards including API and OEUK Guidelines. Independent well examination and verification processes have been undertaken (Section 6.6.7).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 15.2      | Emergency equipment and pollution prevention systems    | <b>Compliant.</b> The MODU is equipped with well control systems, emergency shutdown systems, firefighting equipment, spill response equipment, lifeboats, emergency power supplies and communications systems (Section 6.6.7).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 15.3–15.4 | Certification and inspection                            | <b>Compliant.</b> The drilling unit and associated equipment operate under statutory certification, inspection and maintenance programmes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 16        | <b>Contingency planning</b>                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 16.1–16.3 | Contingency planning                                    | <p><b>Compliant.</b> The Project includes an ERP, oil spill contingency planning, well control emergency response arrangements and coordination with competent authorities (Section 6.6.7). Oil spill modelling has been undertaken as part of emergency preparedness planning.</p> <p>The Project will implement the following measures to ensure full alignment with Offshore Protocol requirements for emergency preparedness and response:</p> <ul style="list-style-type: none"> <li>• A Project-specific Oil Spill Response Plan (OSRP) aligned with national response frameworks and regional Mediterranean cooperation mechanisms coordinated by REMPEC.</li> <li>• Trained personnel with defined response procedures and access to</li> </ul> |



| ARTICLE          | REQUIREMENT                                                                    | ASOPUS-1 COMPLIANCE ASSESSMENT                                                                                                                                                                                                                             |
|------------------|--------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                  |                                                                                | essential equipment and regional resources.<br><ul style="list-style-type: none"> <li>A programme of regular training and drills to ensure a timely and effective response to accidental events.</li> </ul>                                                |
| <b>17</b>        | <b>Notification</b>                                                            |                                                                                                                                                                                                                                                            |
| <b>17.1</b>      | Notification of pollution incidents                                            | <b>Compliant.</b> Incident reporting and notification procedures are included within the ERP and HSE Management System (Section 12.1).                                                                                                                     |
| <b>18</b>        | <b>Mutual assistance in cases of emergency</b>                                 |                                                                                                                                                                                                                                                            |
| <b>18.1</b>      | Mutual assistance in emergencies                                               | <b>Compliant.</b> Emergency response arrangements provide for coordination with national authorities and regional response mechanisms where required (Section 6.6.7).                                                                                      |
| <b>19</b>        | <b>Monitoring</b>                                                              |                                                                                                                                                                                                                                                            |
| <b>19.1</b>      | Monitoring of environmental effects                                            | <b>Compliant.</b> Environmental monitoring includes baseline surveys, drilling monitoring, emissions inventories, waste tracking, discharge controls and a post-drilling ROV seabed survey around the wellhead (Section 12.2).                             |
| <b>19.2</b>      | Regulatory monitoring systems                                                  | <b>Compliant.</b> Project monitoring will support compliance verification under HEREMA requirements and permit conditions (Section 12.2).                                                                                                                  |
| <b>20</b>        | <b>Removal of installations</b>                                                |                                                                                                                                                                                                                                                            |
| <b>20.1</b>      | Removal of installations                                                       | <b>Compliant.</b> Upon completion of drilling, the well will be plugged and abandoned. Temporary subsea equipment will be recovered and seabed clearance verified by an ROV survey (Section 6.14).                                                         |
| <b>20.2–20.3</b> | Pipelines and abandoned infrastructure                                         | <b>Not Applicable.</b> No subsea pipelines will be installed as part of the exploration drilling programme.                                                                                                                                                |
| <b>20.4–20.6</b> | Modification, transfer or enforcement actions                                  | <b>Compliant.</b> Any modifications to operational requirements would be implemented through the regulatory approval process.                                                                                                                              |
| <b>21</b>        | <b>Specially protected areas</b>                                               |                                                                                                                                                                                                                                                            |
| <b>21.1</b>      | Specially protected areas                                                      | <b>Compliant.</b> Environmental surveys and impact assessments confirm that the proposed well location is outside designated protected areas. Appropriate ecological screening of nearby protected sites and sensitive habitats has been undertaken        |
| <b>23</b>        | <b>International rules, standards and recommended practices and procedures</b> |                                                                                                                                                                                                                                                            |
| <b>23.1–23.3</b> | International rules, standards and good practice                               | <b>Compliant.</b> The Project applies, where applicable, recognised international standards including relevant API standards, ISO 16530-1, OEUK Guidelines, IFC EHS Guidelines, IOGP guidance, MARPOL requirements and BAT/BEP principles (Section 5.4.1). |
| <b>26</b>        | <b>Transboundary pollution</b>                                                 |                                                                                                                                                                                                                                                            |
| <b>26.1–26.5</b> | Transboundary pollution                                                        | <b>Compliant.</b> Potential transboundary impacts, including accidental spill scenarios, have been assessed through the ESIA and oil spill modelling. No significant transboundary impacts are anticipated under normal operations.                        |
| <b>27</b>        | <b>Liability and compensation</b>                                              |                                                                                                                                                                                                                                                            |
| <b>27.1–27.2</b> | Liability and compensation                                                     | <b>Compliant.</b> The Operator maintains financial security arrangements and remains responsible for environmental protection, remediation and compensation obligations under applicable legislation.                                                      |

The Asopus-1 exploration drilling project is considered compatible with the applicable provisions of the Barcelona Convention Offshore Protocol based on the current design and planned operations. Compliance is demonstrated through the completion of environmental baseline studies and impact assessment, implementation of BAT and GIIP, use of water-based drilling fluids, management of chemicals and wastes

through approved procedures, application of well integrity and emergency response systems, environmental monitoring, and commitment to plug and abandon the well in accordance with recognised international standards and regulatory requirements.

#### 5.2.3.9.2 Comparative analysis between the Offshore Protocol (Barcelona Convention) and EU Directive on safety of offshore oil and gas facilities (2013/30/EC)

Even during the early development phase of Directive 2013/30/EU on safety of offshore oil and gas operations, it was recognised that both this EU instrument and the Offshore Protocol to the Barcelona Convention would apply in parallel to offshore installations within the territorial waters and Exclusive Economic Zones of EU Member States. This dual regulatory framework remains in force today and requires careful coordination to ensure consistency, avoid duplication, and guarantee full compliance with both environmental and safety obligations across the lifecycle of offshore oil and gas operations.

Although both legal instruments share overarching objectives, namely the reduction of risks to the marine environment and human safety, they differ in their primary focus. The Offshore Protocol is principally oriented toward prevention of marine pollution from offshore exploration and exploitation activities, whereas Directive 2013/30/EU (now fully transposed into national law across EU Member States) establishes a comprehensive offshore safety regime focused on major accident prevention, risk management, and operator liability. In parallel, relevant provisions of broader EU environmental legislation—particularly the Environmental Impact Assessment Directive (2011/92/EU as amended by 2014/52/EU), the Industrial Emissions Directive (2010/75/EU), and the Marine Strategy Framework Directive (2008/56/EC)—also apply to offshore activities, strengthening environmental protection requirements beyond the scope originally considered in earlier comparative analyses.

Since the adoption of Directive 2013/30/EU, EU Mediterranean Member States have fully transposed its provisions into national legislation, integrating requirements such as the Major Accident Prevention Policy (MAPP), Safety and Environmental Management Systems (SEMS), independent verification schemes, and mandatory Major Hazard Reports. At the same time, Contracting Parties to the Barcelona Convention have continued to develop implementation tools for the Offshore Protocol, including regional guidelines, compliance monitoring mechanisms, and cooperation frameworks under UNEP/MAP, reinforcing the alignment between regional and EU regimes.

The parallel application of these two frameworks remains particularly relevant in the Mediterranean context, where EU Member States must ensure compliance with both systems simultaneously. In practice, the Offshore Protocol's requirements—such as environmental permitting conditions, control of discharges, protection of sensitive marine areas, and emergency preparedness—are largely reflected in EU law through Directive 2013/30/EU and associated environmental acquis. However, the Protocol retains added value in certain areas, particularly in marine environmental protection standards, transboundary cooperation, and regional emergency response coordination, which are further operationalised through mechanisms such as the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC).

A key development in the current regime is the increased emphasis on climate and environmental integration, driven by the EU Green Deal and the objective of climate neutrality under Regulation (EU) 2021/1119 (European Climate Law). While this does not directly amend the Offshore Protocol, it influences

national permitting and EIA practice by requiring stronger consideration of greenhouse gas emissions, cumulative impacts, and long-term environmental risk in offshore project assessments.

Today, the Offshore Protocol and EU offshore safety framework operate as complementary and mutually reinforcing systems. Directive 2013/30/EU provides a detailed, legally binding safety architecture covering the entire lifecycle of offshore operations—from design and licensing to decommissioning—while the Offshore Protocol strengthens regional environmental protection and transboundary cooperation. EU Member States, particularly in the Mediterranean, must therefore ensure integrated implementation through their national permitting systems, EIA procedures, and offshore regulatory frameworks, ensuring that both safety and environmental obligations are addressed in a coherent and non-duplicative manner.

This evolving interplay has been further analysed in subsequent European Commission work and Mediterranean regional assessments building on the earlier study “Safety of offshore exploration and exploitation activities in the Mediterranean: creating synergies between the forthcoming EU Regulation and the Protocol to the Barcelona Convention” (Milieu, 2013), while newer policy developments continue to reinforce the need for harmonised implementation and improved regional coordination.

### 5.2.3.10 International Convention for the prevention of pollution from ships (MARPOL)

The International Convention for the Prevention of Pollution from Ships (MARPOL) is the main international convention addressing the prevention of pollution of the marine environment from ships, whether caused by operational or accidental reasons.

The MARPOL Convention was adopted on November 2, 1973, under the framework of the International Maritime Organization (IMO). The 1978 Protocol was adopted in response to a surge of tanker accidents during 1976–1977. Since the 1973 MARPOL Convention had not yet entered into force, the 1978 MARPOL Protocol absorbed the parent Convention. The combined instrument came into effect on December 2, 1983. In 1997, a Protocol amending the Convention was adopted, and a new Annex VI was added, which entered into force on May 19, 2005. MARPOL has been updated periodically through amendments.

The Convention includes regulations aimed at preventing and minimizing pollution from ships, both accidental pollution and pollution from routine operations, and currently comprises six technical Annexes. Most Annexes include Special Areas with strict controls on operational discharges.

**Annex I:** Regulations for the Prevention of Pollution by Oil (entered into force on October 2, 1983)

- It covers the prevention of pollution by oil from operational measures as well as from accidental discharges. The 1992 amendments to Annex I made double hulls mandatory for new oil tankers and established a phased timetable for the retrofit of double hulls on existing tankers, which was subsequently revised in 2001 and 2003.

**Annex II:** Regulations for the Control of Pollution by Noxious Liquid Substances in Bulk (entered into force on October 2, 1983)

- It describes in detail the discharge criteria and measures for controlling pollution from noxious liquid substances carried in bulk. Approximately 250 substances have been evaluated and are included in the list attached to the Convention. The discharge of their residues is permitted only at reception facilities up to certain concentrations and under conditions (which vary depending on the category of substances)

that must be observed.

- In any case, the discharge of residues containing noxious substances is prohibited within 12 miles from the nearest shore.

**Annex III:** Prevention of Pollution by Harmful Substances Carried by Sea in Packaged Form (entered into force on July 1, 1992)

- It contains general requirements for the issuance of detailed standards on packaging, labeling, documentation, quantity limitations, exemptions, and notifications.
- For the purposes of this Annex, “harmful substances” are substances classified as marine pollutants in the International Maritime Dangerous Goods Code (IMDG Code) or that meet the criteria of the Appendix to Annex III.

**Annex IV:** Prevention of Pollution by Sewage from Ships (entered into force on September 27, 2003)

- It includes the requirements for controlling pollution of the sea by sewage. The discharge of sewage into the sea is prohibited unless the ship operates an approved sewage treatment plant or discharges comminuted and disinfected sewage using an approved system at a distance greater than three nautical miles from the nearest shore. Sewage that is neither comminuted nor disinfected must be discharged at a distance greater than 12 nautical miles from the nearest shore.

**Annex V:** Prevention of Pollution by Garbage from Ships (entered into force on December 31, 1998)

- It deals with various types of garbage and defines the distances from the shore and the way they can be disposed of. The most important feature of the Annex is the complete ban it imposes on the discharge of any form of plastic into the sea.

**Annex VI:** Prevention of Air Pollution from Ships (entered into force on May 19, 2005)

- It sets limits on sulfur oxide (SOx) and nitrogen oxide (NOx) emissions from ship exhaust gases and prohibits deliberate emissions of ozone-depleting substances. In designated emission control areas, stricter standards apply for SOx, NOx, and particulate matter. A chapter approved in 2011 covers mandatory technical and operational energy efficiency measures aimed at reducing greenhouse gas emissions from ships.

The MARPOL Convention, its amendments, and protocols were ratified by Greece through the following laws, Presidential Decrees, and Ministerial Decisions:

- Law 1269/1982 (GG 89/A/21-07-1982)
- Presidential Decree 404/1986 (GG 182/A/26-11-1986)
- Presidential Decree 254/1989 (GG 120/A/11-05-1989)
- Presidential Decree 288/1992 (GG 147/A/02-09-1992)
- Presidential Decree 103/1992 (GG 47/A/31-03-1992)
- Presidential Decree 46/1993 (GG 17/A/17-02-1993)
- Presidential Decree 361/1996 (GG 233/A/20-09-1996)
- Presidential Decree 54/1999 (GG 53/A/22-03-1999)
- Presidential Decree 128/2000 (GG 112/A/06-04-2000)

- Presidential Decree 206/2000 (GG 186/A/25-08-2000)
- Presidential Decree 312/2002 (GG 273/A/13-11-2002)
- Presidential Decree 114/2006 (GG 112/A/08-06-2006)
- Ministerial Decision 2431.02/02/05 (GG 331/B/15-03-2005)
- Presidential Decree 27/2007 (GG 19/A/30-01-2007)
- Ministerial Decision 2431.02.1/02/07 (GG 197/A/23-08-2007)
- Law 3104/2003 (GG 28/A/10-02-2003)

The drilling unit and marine support vessels engaged in the Project are required to comply with the applicable provisions of MARPOL and its implementing Greek legislation, including the requirements of Annexes I, IV, V and VI on the management of oil, sewage, garbage and air emissions. These provisions are implemented through vessel-specific procedures and the Project's Pollution Prevention Management Plan (PPMP). In the following sections of this chapter, the Project's design measures for managing operational discharges and emissions from ships, and their consistency with MARPOL requirements, are described in more detail.

#### 5.2.3.11 IMO Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC)

In July 1989, a summit of leading industrialized nations in Paris called on the International Maritime Organization (IMO) to further develop measures for the prevention of pollution from ships. This request was approved by the IMO Assembly in November of the same year, and work began on drafting a convention aimed at providing a global framework for international cooperation in responding to major incidents or threats of marine pollution.

The contracting parties to the International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC) are required to establish measures for responding to pollution incidents, either at the national level or in cooperation with other countries.

Ships are required to have an emergency plan for responding to oil pollution, and operators of offshore units under the jurisdiction of the Contracting Parties are also obliged to have oil pollution emergency plans or similar arrangements. These must be coordinated with national systems to ensure a prompt and effective response to oil pollution incidents.

In addition, ships are obligated to report pollution incidents to coastal authorities, and the Convention outlines in detail the actions that must be taken in response. The Convention calls for the establishment of oil spill response equipment stockpiles, the conduct of oil spill response exercises, and the development of detailed contingency plans for dealing with pollution incidents.

The Contracting Parties to the Convention are obliged to provide assistance to others in the event of an emergency pollution situation, and any assistance provided is expected to be reimbursed.

In 2000, a Protocol related to hazardous and harmful substances (OPRC-HNS Protocol) was also adopted.

The Project has been developed in line with the obligations and principles of the OPRC Convention as implemented in Greek legislation. Operational discharges and routine shipboard emissions are managed under the Project's Pollution Prevention Management Plan (PPMP) and MARPOL-compliant vessel

procedures, while preparedness and response to accidental marine pollution are addressed through the Project Emergency Response Plan (ERP). Worst-case accidental oil spill has been analysed using oil spill modelling, and the results have been used to define response strategies, resource requirements and notification procedures that are consistent with the national and regional oil pollution preparedness and response framework.

### 5.2.3.12 United Nations Convention on the Law of the Sea (UNCLOS)

The United Nations Convention on the Law of the Sea (UNCLOS), also known as the Law of the Sea Convention or the Law of the Sea Treaty, is the international agreement that resulted from the Third United Nations Conference on the Law of the Sea (UNCLOS III), held between 1973 and 1982. The Convention defines the rights and responsibilities of nations regarding their use of the world's oceans, establishing guidelines for operations, environmental protection, and the management of marine natural resources. Concluded in 1982, the Convention replaced four treaties from 1958. UNCLOS came into force in 1994.

As of January 2015, 166 countries and the European Union have acceded to the Convention. However, it remains uncertain whether the Convention codifies customary international law.

### 5.2.3.13 Stockholm Convention on Persistent Organic Pollutants (POPs)

The Stockholm Convention on Persistent Organic Pollutants (POPs) is an international environmental treaty, signed in 2001 and entered into force in May 2004, aiming to eliminate or restrict the production and use of persistent organic pollutants.

Key elements of the Convention include the obligation of developed countries to provide new and additional financial resources and measures to eliminate the production and use of intentionally produced persistent organic pollutants, to eliminate unintentional production of pollutants where feasible, and to manage and dispose of persistent organic pollutant waste in an environmentally sound manner. Attention is given throughout the Stockholm Convention, with specific references to the preamble, the objective, and the provision concerning the identification of new persistent organic pollutants.

### 5.2.3.14 International Convention for the Safety of Life at Sea (SOLAS) regarding Noise Emissions on Ships

The main objective of the SOLAS Convention, adopted in 1974, is to establish the minimum standards for the construction, equipment, and operation of ships to ensure their safety. Flag states are responsible for ensuring that ships flying their flag comply with the Convention's requirements, which is evidenced by a series of certificates required under the Convention. The prescribed inspection procedures also allow contracting states to inspect ships of other contracting states if there are serious indications of non-compliance with the Convention's requirements—this process is known as port State control. The current SOLAS Convention includes articles defining general obligations, procedures for amending the Convention, etc., as well as an Annex divided into 14 chapters.

In 2012, IMO adopted a regulation under the SOLAS Convention requiring ship construction to aim at reducing onboard noise and protecting personnel from noise exposure, in accordance with the Code on Noise



Levels on Board Ships. The Code sets maximum noise level limits in engine rooms, control rooms, workshops, accommodations, and other ship areas. The International Labour Organization's Maritime Labour Convention (MLC 2006) also establishes requirements for preventing the risk of exposure to hazardous noise levels on ships.

The SOLAS Convention was ratified by Law 1045/1980, and a series of Presidential Decrees have been issued adopting the Convention's amendments.

The drilling unit and marine support vessels engaged in the Project are required to comply with the applicable provisions of SOLAS and the Code on Noise Levels on Board Ships, as implemented in Greek and flag-state legislation, including measures to protect crew from excessive onboard noise.

### 5.2.3.15 International convention on the establishment of an international Fund for Compensation for Oil Pollution Damage (FUND)

Although the 1969 Civil Liability Convention (CLC) was a useful mechanism to ensure compensation payments for oil pollution damage, it did not adequately address all the legal, financial, and other issues raised during the Conference that approved of the CLC. The 1969 Brussels Conference is considered a compromise proposal to create an international fund, where cargo insurance interests would be registered, with the dual purpose of, on one hand, relieving the shipowner from the burden of claims under the new convention, and on the other hand, providing additional compensation to victims of pollution damage in cases where the compensation foreseen by the 1969 Civil Liability Convention was either insufficient or unattainable.

The Conference recommended that the International Maritime Organization establish this system, and the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage was adopted at a conference held in Brussels in 1971. It is complementary to the Civil Liability Convention.

The purposes of the Fund Convention are:

- To provide compensation for pollution damage to the extent that the protection provided by the 1969 Civil Liability Convention is inadequate.
- To provide relief to shipowners regarding the additional financial burden imposed on them by the 1969 Civil Liability Convention. This relief is subject to conditions designed to ensure compliance with maritime safety and other conventions.
- To implement the relevant objectives set out in the Convention.

According to the first purpose, the Fund is obligated to pay compensation to States and individuals who suffer damage from pollution if these parties are unable to obtain compensation from the owner of the ship from which the oil escaped, or if the compensation owed by the shipowner is insufficient to cover the damage suffered.

Under the Fund Convention, victims of oil pollution damage may be compensated beyond the liability limit of the shipowner. However, the Fund's obligations are limited. When there is no liable shipowner or the shipowner responsible is unable to meet their liability, the Fund must pay the full amount of the compensation owed. Under certain conditions, the Fund's maximum liability can be increased.



Apart from a few cases, the Fund is obliged to pay compensation to victims of oil pollution damage who are unable to obtain sufficient or any compensation from the shipowner or their guarantor under the Civil Liability Convention.

The Fund's obligation to pay compensation is limited to pollution damage occurring within the territory, including the territorial waters, of the Contracting States. The Fund is also obliged to pay compensation related to measures taken by a Contracting State outside its territory.

The Fund may also provide assistance to Contracting States threatened or affected by pollution and wishing to take measures to combat it. This assistance may take the form of personnel, equipment, credit facilities, or other support.

Regarding its second main function, the Fund is obliged to compensate the shipowner or their insurer for part of the shipowner's liability under the Civil Liability Convention.

The Fund is not required to compensate the shipowner if the damage was caused by their own willful misconduct or if the accident was caused, due to the ship non-compliance (even partly) with international conventions. Additionally, the Convention includes provisions concerning the claims procedure, rights and obligations, as well as jurisdiction.

Contributions to the Fund must be made by all people receiving oil by sea in Contracting States.

Greece ratified the Convention, its Protocols, and amendments through Law 1638/1986, Presidential Decrees 270/1995, 270/1995, 286/2002, 291/2003, and Law 3482/2006.

The Project is consistent with the objectives of the Fund Convention, as any vessel operations associated with the Asopus-1 exploration well will be required to use appropriately insured ships and comply with applicable civil liability and oil pollution compensation regimes, ensuring that any qualifying oil pollution damage could be addressed within the framework of the 1969 Civil Liability Convention and the Fund Convention.

#### 5.2.3.16 Directive 2012/18/EU on the Control of Major-Accident Hazards Involving Dangerous Substances (Seveso III Directive)

Directive 96/82/EC (Seveso II) on the control of major-accident hazards involving dangerous substances established the earlier EU framework for identifying high-risk industrial sites, adopting appropriate measures to prevent major accidents involving dangerous substances, and limiting their consequences for humans and the environment. It has since been replaced by Directive 2012/18/EU (Seveso III), the current EU legislation on major accident hazards.

Seveso Directive is not directly applicable to offshore exploration drilling activities such as the Asopus-1 well. The Directive is designed to regulate fixed "establishments" where specified quantities of dangerous substances are present in onshore installations, such as chemical plants, refineries, and bulk storage facilities. An exploration well, by contrast, is a temporary, mobile offshore operation conducted using a drilling unit and does not constitute a Seveso establishment; hydrocarbons encountered during drilling remain in the subsurface reservoir and are not intentionally stored as part of the installation inventory. Any fuels, drilling fluids, and chemicals present on the drilling unit are managed under maritime and offshore petroleum safety regimes rather than under Seveso classification thresholds.

Consequently, the Project falls outside the direct scope of Seveso Directive; however, the general principles of major-accident hazard identification, prevention and risk management embodied in the Directive are reflected in applicable offshore safety legislation and industry standards governing well control and offshore operations. In this context, the Project has been designed and assessed in accordance with the offshore major hazard regulatory framework, supported by specific studies such as the Quantitative Risk Assessment (ORA) and the Report on Major Hazards (RoMH)<sup>18</sup>, which demonstrate the measures in place to prevent major accidents involving dangerous substances and to limit their consequences for people and the environment.

### 5.2.3.17 International convention for the control and management of ships ballast water and sediments (BWM)

Invasive aquatic species pose a significant threat to marine ecosystems worldwide, with shipping recognized as one of the primary pathways for their introduction into new environments. This issue has intensified over recent decades due to the growth of global trade and maritime traffic, particularly following the widespread adoption of steel-hulled vessels that use water, rather than solid materials, as ballast. The introduction of non-native species has caused severe ecological, economic, and social impacts in many regions. Available data indicate that the rate of biological invasions continues to rise at an alarming pace, and with seaborne trade volumes expected to increase further, the risk remains substantial.

To address this challenge, the Ballast Water Management (BWM) Convention, adopted in 2004, establishes international standards and procedures for the management and control of ships' ballast water and sediments. Its primary objective is to prevent, minimize, and ultimately eliminate the transfer of harmful aquatic organisms and pathogens between regions through ballast water operations.

Several guidelines have been developed to facilitate the implementation of the Convention.

The Convention will require all ships to implement a Ballast Water and Sediments Management Plan. All ships will have to carry a Ballast Water Record Book and will be required to carry out ballast water management procedures to a given standard. Existing ships will be required to do the same, but after a phase-in period.

The Convention comprises Articles that cover critical elements relating to the management of ballast water from ships mainly concerning:

General obligations that parties need to undertake to give full and complete effect to the provisions of the Convention and the Annex to prevent, minimize and ultimately eliminate the transfer of harmful aquatic organisms and pathogens through the control and management of ships' ballast water and sediments.

Stricter ballast water management measures that parties may adopt than those required by the Convention, provided these are consistent with international law. Such measures must not create greater environmental, health, or economic harm than the risks they are intended to prevent.

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<sup>18</sup> Energean Hellas Ltd, RoMH Stena DrillMAX Submission - Block 2 Exploration, Document Ref. GRC-BL2-HSE-DRI-006, May 2026

Ports and terminals obligations where ballast tank cleaning or repair activities take place and the provision of adequate sediment reception facilities for the reception and safe disposal of sediments removed from ships' ballast tanks.

The encouragement of parties to undertake research and monitoring of the effectiveness of ballast water management measures applied and to promote scientific and technical research to achieve the transfer reduction of harmful aquatic organisms and pathogens.

The certification, inspection and surveillance of ships by port authorities, the regular confirmation that ships are carrying valid Ballast Water Management Certificates and the review of Ballast Water Record Books.

The encouragement of parties to provide technical assistance and cooperation, including personnel training, technology transfer, equipment availability, research initiatives, and capacity-building activities, to support the effective implementation of the Convention worldwide.

The Annex of the Convention provides the operational, technical, and certification framework for controlling ballast water and sediments, thereby reducing the risk of introducing invasive aquatic species and protecting marine ecosystems.

- Section A – General Provisions, establishes the scope, definitions, application, and exemptions of the Convention. It requires that ballast water may only be discharged in accordance with approved ballast water management procedures.
- Section B – Management and Control Requirements for Ships, requires ships to carry and implement an approved Ballast Water Management Plan and maintain a Ballast Water Record Book documenting ballast water operation. It also sets out management requirements, including ballast water exchange procedures and sediment removal and disposal practices.
- Section C – Additional Measures, allows Parties to introduce stricter national or regional measures to further prevent the transfer of harmful aquatic organisms and pathogens. Such measures must be communicated to the IMO and coordinated with potentially affected neighbouring States.
- Section D – Standards for Ballast Water Management, establishes the technical standards for ballast water management:
  - D-1 Standard: Requires ballast water exchange with at least 95% volumetric efficiency, generally conducted offshore and in deep waters.
  - D-2 Standard: Limits the concentration of viable organisms and indicator microbes discharged in ballast water, typically achieved through approved treatment systems. This section also sets approval requirements for ballast water treatment systems, allows testing of innovative treatment technologies, and requires periodic review of the standards by the IMO.
- Section E – Survey and Certification Requirements, defines survey, inspection, certification, and renewal requirements to verify compliance with the Convention. Ships must obtain and maintain a valid Ballast Water Management Certificate and keep records demonstrating compliance.

The Project has been designed to comply with the requirements of the Ballast Water Management (BWM) Convention. Compliance is consistent with the relevant provisions of Regulations B-1, D-1, D-2, and D-3, including the implementation of an approved Ballast Water Management Plan, the maintenance of a Ballast Water Record Book, adherence to ballast water exchange and performance standards, and the use of approved ballast water management systems relating to the rig and supporting vessels.

### 5.2.3.18 Industrial emissions directive (2010/75/EU)

Directive 2008/1/EC on Integrated Pollution Prevention and Control (commonly known as the "IPPC Directive") established the original EU framework for the integrated permitting of industrial installations based on Best Available Techniques (BAT). The issuance of this permit requires compliance with certain environmental requirements so that businesses themselves undertake the prevention and reduction of pollution they may cause.

Integrated prevention and control of pollution apply to industrial and agricultural activities, whether new or existing, with a high pollution potential, as defined in Annex I of the Directive (energy industries, metal production and processing, mining industry, chemical industry, waste management).

For an industrial or agricultural facility to obtain an operating permit, it must comply with certain fundamental obligations mainly concerning:

- use of all necessary pollution control measures, primarily the application of the best available techniques (to minimize waste generation, use the least hazardous substances, enable the recovery and recycling of emitted substances, etc.)
- prevention of any major pollution incidents
- prevention, recycling, or disposal of waste with the least polluting impact
- efficient use of energy
- prevention of accidents and the limitation of their consequences
- the restoration of the site after the completion of activities.

Directive 2008/1/EC was subsequently repealed and recast by Directive 2010/75/EU on Industrial Emissions (IED), which remains the principal EU legislation governing industrial emissions. The IED has since been replaced by Directive (EU) 2024/1785, which strengthens pollution prevention measures, expands the scope of regulated activities, and reinforces the EU's objectives for environmental protection and sustainable industrial operations.

The proposed project is not directly subject to the IPPC/IED Directive as it concerns an offshore exploration well without production facilities, and the associated onshore support activities do not fall within any of the categories listed in Annex I of the Industrial Emissions Directive.

### 5.2.3.19 Convention for the prevention of marine pollution by dumping of wastes and other matter (London Convention)

The Convention for the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention) is one of the first global conventions for the protection of the marine environment from human activities and has been in force since 1975. Its aim is to promote effective control of all sources of marine pollution and to take all practical measures to prevent marine pollution caused by the dumping of waste and other matter. Currently, 87 countries are contracting parties to the Convention, including Greece. In 1996, the "London Protocol" was agreed upon for further modernization and eventual replacement of the Convention. According to the Protocol, all dumping practices are prohibited except for waste accepted on the so-called "reverse list," which includes the following:

- Dredged material
- Sewage sludge
- Fish waste
- Vessels and platforms
- Inert, inorganic geological materials (e.g. mining waste)
- Organic materials of natural origin
- Bulky items primarily comprising iron, steel, concrete
- Waste from carbon dioxide capture processes

The Protocol entered into force on March 24, 2006, with 51 contracting parties. Greece ratified the London Convention through Law 1147/1981 but has not yet ratified the corresponding London Protocol.

The Project is consistent with the objectives of the Convention, which aim to prevent marine pollution arising from the dumping of waste and other matter. The following sections of this chapter set out the alignment of project-specific design measures for the management of operational discharges and ship-generated waste, demonstrating that the planned activities do not entail prohibited dumping.

#### 5.2.3.20 Regulation (EC) 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

The REACH Regulation, which entered into force on June 1, 2007, requires manufacturers and importers of chemical products to assess the risks arising from the use of chemical substances and to manage those risks. REACH applies to the manufacture, placing on the market, or use of substances in their pure form, in mixtures, or in articles, as well as the placing of mixtures on the market. A “substance” is defined as a chemical element and its compounds in the natural state or as obtained by any manufacturing process.

Key elements of REACH include the registration requirements, under which the production or import of chemical substances in quantities of one ton or more per year must be registered. Substances of very high concern are also subject to an authorisation process. Additionally, the REACH Regulation implements a restriction procedure, which sets limitations on the manufacturing conditions, use(s), and/or placing on the market of a substance—or may even lead to a complete ban on its manufacture, use, or placing on the market.

Although the draft EU Regulation does not specifically refer to REACH, it is considered relevant, as the Offshore Protocol requires that the use of chemical substances for the exploration and/or exploitation of resources be regulated, restricted, or prohibited.

The Project is consistent with the objectives and relevant provisions of the said Regulation, as its design considers applicable REACH requirements for the selection, documentation and use of chemical substances and mixtures in the Chemical Use Plan and associated management measures.

The Project complies with the restrictions and guidelines of the said Regulation, as its design has incorporated all specifications related to the use of chemical substances.

### 5.2.3.21 OSPAR Convention - Offshore Chemical Notification Scheme (OCNS)

The OSPAR Commission Convention is the principal international legal framework established for the protection of the marine environment of the North-East Atlantic against pollution and other adverse effects arising from human activities. Although it does not apply directly to offshore activities in Greece, several OSPAR-developed methodologies and guidance documents are widely recognised as Good International Industry Practice (GIIP) for offshore environmental management. In particular, the Harmonised Offshore Chemical Notification Format (HOCNF) and associated chemical assessment methodologies are frequently utilised within the offshore oil and gas industry to support chemical selection, environmental risk assessment and substitution of products with lower environmental impact.

The Convention was adopted in 1992 through the unification and modernization of the earlier Oslo Convention (1972), concerning the prevention of marine pollution by dumping from ships and aircraft, and the Paris Convention (1974), concerning pollution from land-based sources. The OSPAR Convention entered into force in 1998 and establishes legally binding obligations for Contracting Parties to take all possible measures to prevent and eliminate pollution, protect maritime ecosystems and biodiversity, and ensure the sustainable use of marine resources.

The Convention addresses multiple sources of marine pollution, including land-based sources, offshore oil and gas activities, dumping and incineration at sea, and the protection of marine ecosystems and biodiversity. Of particular relevance to offshore hydrocarbon exploration and production activities is Annex III of the Convention, which concerns the prevention and elimination of pollution from offshore sources. Annex III requires Contracting Parties to implement regulatory and operational measures ensuring that offshore installations and associated activities are designed, operated, and maintained in a manner that minimizes the risk of pollution and environmental harm.

Within this framework, the OSPAR system has also developed harmonized mechanisms for the environmental management of offshore chemicals, including the Harmonised Mandatory Control System (HMCS) and the Harmonised Offshore Chemical Notification Format (HOCNF), which form the basis of national schemes such as the Offshore Chemical Notification Scheme (OCNS). Similar mechanisms for non-OSPAR regions (Mediterranean) can establish standardized procedures for the environmental assessment, classification, authorization, and substitution of offshore chemicals based on their ecotoxicological characteristics and environmental risk profile. Consequently, the OSPAR Convention constitutes the overarching international framework governing environmental protection requirements applicable to offshore hydrocarbon activities in the North-East Atlantic region, including obligations relating to pollution prevention, chemical management, environmental monitoring, and continuous improvement of environmental performance.

The Convention further promotes the application of Best Available Techniques (BAT), Best Environmental Practice (BEP), pollution prevention principles, risk-based environmental management, and the precautionary principle in offshore operations.

The Project may use OSPAR-derived methodologies as part of Good International Industry Practice when evaluating offshore chemical products and compiling the Chemical Use Plan (CUP). These tools can be used to screen, compare, and document the environmental hazards of chemicals and to support transparent product selection and substitution decisions. They are used solely as technical support and do not create additional legal obligations beyond those set by Greek legislation, the Barcelona Convention Offshore

Protocol and the REACH Regulation, which together form the binding regulatory framework for chemical management.

The Project design and operating procedures apply the principles of pollution prevention, minimisation of offshore discharges, Best Available Techniques (BAT), Best Environmental Practice (BEP) and ongoing environmental management and monitoring. Offshore chemicals will be selected for their environmental performance and suitability for offshore use, considering recognised international methodologies where appropriate. The detailed assessment of chemical suitability and the full chemical inventory are set out in the Chemical Use Plan (CUP) accompanying this Environmental and Social Impact Assessment, prepared in compliance with applicable Greek legislation, the REACH Regulation and the requirements of the Barcelona Convention Offshore Protocol.

## 5.2.4 Legislative framework for human rights and social welfare

### 5.2.4.1 Social welfare legislation in Greece

National legislation on social welfare includes:

- Articles 29 and 30 of Presidential Decree 141/2013.
- Establishment of the Asylum Service by Law 3907/2011, which began operating in June 2013. It is the first independent structure in Greece responsible for examining international protection applications. The same law established the Appeals Authority, which reviews appeals against decisions of the Asylum Service rejecting international protection applications at first instance, as well as the Reception and Identification Service, through which a system of first reception and registration of the data and needs of those entering Greece without legal formalities was launched, including individuals wishing to seek asylum. Currently, the operation of all three services is regulated by Law 4375/2016.
- Article 1 (IA) (2) of Law 4093/2012, as amended by Article 6 of Law 4472/2017.
- Article 10 of Law 3220/2004.
- JMD G4a/F.225/161 (GG 108/B/15.2.1989).
- Article 235 of Law 4389/2016.
- Article 93 of Law 4387/2016.

### 5.2.4.2 Human rights framework in Greece

The Greek authorities make every possible effort to ensure that the level of protection of fundamental rights is upheld by all state bodies and institutions, to guarantee the rules of a free, non-discriminatory democratic society. In the hierarchy of legal rules that guarantee the protection of fundamental rights, the Greek Constitution, as the supreme law, includes a special chapter on individual and social rights (Part B - Articles 4-25) (Greek Council for Refugees, 2019).

The Hellenic National Commission for Human Rights (HNCHR), as an independent advisory body of the State on matters of Human Rights protection, constitutes the National Human Rights Institution (NHRI). According to UN principles, within the scope of its powers granted by its founding law, it is tasked with monitoring



developments in its areas of activity, addressing the competent state services, and undertaking initiatives to raise public awareness (Greek Council for Refugees, 2019). The HNCHR places special importance on the status of international protection and has issued a series of related decisions (reports, statements, announcements), such as the recent reference report on refugees (September 2019), which outlines the HNCHR's positions on the reception and housing of applicants for international protection, the detention of applicants for international protection, international protection procedures at the first and second instance, unaccompanied minors, the pushback of third-country nationals at the Greek-Turkish borders, and the integration of refugees in Greece (Greek Council for Refugees, 2019).

Additionally, the National Action Plan for Human Rights was established by the Greek State for the period 2014-2016 to strengthen, implement, and protect fundamental rights in Greece.

#### 5.2.4.3 International human rights framework

International law on human rights is based on the Universal Declaration of Human Rights and consists of 9 core international instruments with additional optional protocols. The relevant international instruments on human rights are listed below:

- International Covenant on Civil and Political Rights (ICCPR): The ICCPR recognizes the dignity of every individual and promotes the protection of individuals' freedom from state interference, ensuring that everyone can participate in civil society. Freedom of speech and freedom of assembly are part of these rights.
- International Covenant on Economic, Social and Cultural Rights (ICESCR): The parties to the ICESCR agree to protect the enjoyment of these rights from violations by third parties.

#### 5.2.4.4 International labour rights regulations

The International Labour Organization (ILO) is a UN agency that sets labor standards, develops policies, and designs programs that promote decent work for all women and men.

The eight fundamental conventions of the ILO are as follows:

- Convention on Freedom of Association and Protection of the Right to Organise, 1948 (No. 87)
- Convention concerning the Application of the Principles of the Right to Organise and to Bargain Collectively, 1949 (No. 98)
- Convention concerning Forced or Compulsory Labour, 1930 (No. 29) (and the 2014 Protocol)
- Convention concerning the Abolition of Forced Labour, 1957 (No. 105)
- Convention concerning the Minimum Age, 1973 (No. 138)
- Convention concerning the Worst Forms of Child Labour, 1999 (No. 182)
- Convention concerning Equal Remuneration, 1951 (No. 100)
- Convention concerning Discrimination (Employment and Occupation), 1958 (No. 111)
- C155 - Occupational Safety and Health Convention, 1981 (No. 155)
- C187 - Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187)

Greece has ratified the following ILO conventions:

- Greece has ratified 75 Conventions and 2 Protocols, of which 52 are currently in force. Eleven Conventions have been denounced, and 12 instruments have been abrogated. Of the 75 Conventions and 2 Protocols ratified by Greece, 2 have been ratified in the past 12 months.
- Fundamental Conventions: 10 out of 10.
- Governance (Priority) Conventions: Greece has not ratified Convention C129 – Labour Inspection (Agriculture), 1969.
- Technical Conventions: 62 out of 178.

#### 5.2.4.5 Aarhus convention

The United Nations Economic Commission for Europe (UNECE) Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters was adopted on 25 June 1998 in the city of Aarhus, Denmark, during the Fourth Ministerial Conference in the framework of the “Environment for Europe” process.

The Convention:

- Links environmental and human rights
- Recognizes that we have an obligation towards future generations
- States that sustainable development can only be achieved with the participation of all interested parties
- Connects governmental accountability and environmental protection
- Focuses on the interactions between citizens and public authorities within a democratic framework.

The subject matter of the Convention concerns the core of the relationship between citizens and governments and addresses governmental accountability, transparency, and responsiveness.

The Aarhus Convention grants rights to citizens and imposes obligations on the Parties and public authorities regarding access to information, public participation, and access to justice.

The Aarhus Convention also establishes a new process for public participation in the negotiation and implementation of international agreements.

Its three main pillars are as follows:

- **Access to information:** Every citizen must have the right to broad and easy access to environmental information. Public authorities are obliged to provide all the required information, and to collect and disseminate it in a timely and transparent manner. This includes information about the state of the environment, the policies and measures being taken, or the state of human health and safety in cases where it may be affected by the condition of the environment. Certain information is exempt from disclosure, such as in cases where disclosure would negatively affect international relations, national defense, public security, the functioning of justice, trade secrets, or the confidentiality of personal data. Information may also be withheld if its release could harm the environment, such as the locations of breeding grounds of rare species.
- **Public participation in decision-making:** Citizens have the right to participate in decision-making on

environmental matters. Public authorities must ensure that mechanisms are in place to allow the public to be informed and, if they wish, to comment on proposals for projects that affect the environment, or on plans and programs relating to the environment. Any comments must be considered in the decision-making process. Decision-makers can benefit from the knowledge and experience of citizens. This contribution is a significant opportunity to improve the quality of environmental decisions and outcomes, and it guarantees procedural legitimacy.

- **Access to justice:** Citizens have the right to judicial or administrative appeal procedures in cases where a Party violates or fails to comply with the principles of the Convention. In other words, they have the right to seek redress when environmental law is violated and to access review procedures to challenge public decisions made without consideration of the Convention's other two pillars.

The project's design, development, and permitting processes are intended to comply with the requirements of the Aarhus Convention.

#### 5.2.4.5.1 European legislation

The EU legislation concerning public consultation, public participation, and stakeholder involvement in environmental information includes the following Directives:

- Directive 2003/35/EC of the European Parliament and of the Council, dated 26 May 2003, on public participation in the preparation of certain plans and programs relating to the environment, and amending, with regard to public participation and access to justice, Council Directives 85/337/EEC and 96/61/EC. Directive 2003/35/EC refers to the second pillar of the "Aarhus Convention."
- Directive 2003/4/EC of the European Parliament and of the Council, dated 28 January 2003, on public access to environmental information and repealing Council Directive 90/313/EEC. Directive 2003/4/EC refers to the first pillar of the "Aarhus Convention."

#### 5.2.4.5.2 National legislation

Greece has ratified and incorporated the European legislation concerning the requirements for consultation and public and stakeholder participation in environmental information through the following laws:

- JMD 1649/45/2014, as amended by JMD 5688/2018, includes provisions and specifications regarding: a) the means of consultation between various authorities, and b) the ways of informing the public as well as their participation in public consultation during the environmental permitting process.
- JMD 21398/2012 concerns the creation and operation of a dedicated website for publishing decisions related to the approval, renewal, or modification of environmental permits.
- JMD 9269/470/2007 relates to judicial procedures for protecting the public from administrative acts or omissions regarding the disclosure of information and participation during the environmental permitting process.
- JMD 11764/653/2006 incorporates Directive 2003/4/EC regarding public access to environmental information.
- Law 3422/2005 ratifies the Aarhus Convention (Directive 2003/35/EC).

- JMD 3711/2021/2003 concerns media tools and citizen participation during the approval of environmental terms.

### 5.3 International – EU – National environmental protection goals related to the project

#### 5.3.1 International – EU environmental protection goals related to the project

##### 5.3.1.1 United Nations 2030 Agenda

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The 2030 Agenda for Sustainable Development, along with the 17 Sustainable Development Goals and 169 targets, was adopted within the framework of the United Nations General Assembly on September 25, 2015, through the resolution "Transforming Our World: The 2030 Agenda for Sustainable Development."

The 2030 Agenda is the most ambitious global agreement ever achieved by the UN, as it is an action plan for People, Planet, and Prosperity. The 2030 Agenda promotes the integration of all three dimensions of sustainable development — social, environmental, and economic — across all sectoral policies, while also fostering the interconnection and coherence of policies and legislative frameworks related to the **Sustainable Development Goals (SDGs)**.

Sustainable development can be understood through addressing challenges related to the following five pillars (5 P):

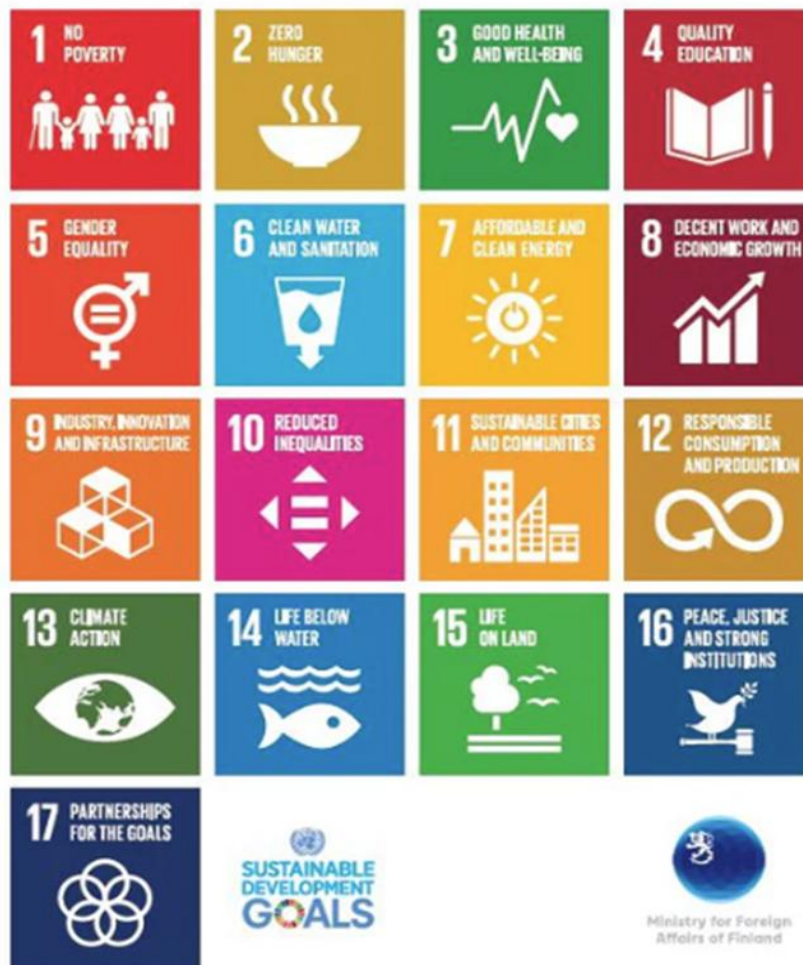
- People,
- Planet,
- Prosperity,
- Peace,
- Partnership.

The 17 SDGs (as shown in the following diagram) were adopted by the 193 UN member states, including Greece, and are universal with a target implementation timeline until 2030.

They serve as a roadmap for achieving a better and more sustainable future for all. The goals are interconnected and indivisible, meaning that achieving one goal impacts the achievement of others.

# 2030 Agenda

UN Sustainable Development Goals



Source: United Nations Regional Information Centre, <https://unric.org/>

Figure 5-5: Sustainable Development Goals of the United Nations 2030 Agenda

The 2030 Agenda is the international community's roadmap for achieving sustainable development for all — that is, economic development that guarantees social well-being without exclusion and the protection of the environment and natural resources for the benefit not only of current but also future generations — by 2030.

For the implementation of the SDGs, all UN member states have made commitments, and the EU, together with its member states, has committed to taking a leading role in the implementation of the United Nations 2030 Agenda.

In November 2016, the European Commission presented its strategic approach for implementing the Sustainable Development Goals of the 2030 Agenda.

Key actions for the implementation of the 2030 Agenda include the following:

- Integration of the SDGs into all EU policies and initiatives, so that sustainable development becomes a fundamental guiding principle in all European Commission policies.
- Regular reporting on the EU's progress, starting in 2017.

- Promotion of the implementation of the 2030 Agenda jointly with the governments of EU member states, the European Parliament, other European institutions, international organizations, civil society organizations, citizens, and other stakeholders.
- Creation of a high-level platform involving multiple stakeholders to promote the exchange of best practices across all sectors at both national and European levels.
- Formulation of a long-term vision extending beyond 2020.

The SDGs are interconnected and therefore require a much more integrated approach across all policy sectors – from addressing poverty and social exclusion (SDG 1), ensuring universal access to quality health (SDG 3) and education services (SDG 4), securing full employment and decent work for all (SDG 8), promoting development in the fields of industry, innovation, and infrastructure (SDG 9), and reducing social and regional inequalities (SDG 10), to ensuring integrated water resource management (SDG 6), promoting renewable energy and energy efficiency (SDG 7), and protecting and sustainably managing the oceans (SDG 14). Finally, the SDGs also include cross-cutting goals, such as building efficient, reliable, and transparent institutions (SDG 16) and strengthening and promoting open, participatory, and democratic processes as means of implementation (SDG 17). It is worth noting that approximately 7 out of the total 17 Goals are directly related to environmental issues (see SDG 6 – water, SDG 7 – sustainable energy, SDG 11 – sustainable cities, SDG 12 – sustainable production and consumption patterns, SDG 13 – climate change, SDG 14 – marine environment, SDG 15 – biodiversity), with environmental SDGs acting as a "catalyst" for achieving all other goals.

Potential contributions of an offshore exploration well could involve the below per possible SDG identified:

**Table 5-9: Potential contributions of an offshore exploration well**

| SDG                                                    | POTENTIAL CONTRIBUTION OF AN OFFSHORE EXPLORATION WELL                                                                                                                                                                                                                                                     |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SDG7 – Affordable and Clean Energy</b>              | Exploration helps identify domestic hydrocarbon resources that can contribute to national energy security, diversify energy supply, and reduce reliance on imported fuels during the energy transition. It does not directly contribute to “clean energy” but may support a secure and orderly transition. |
| <b>SDG 8 – Decent Work and Economic Growth</b>         | Generates direct and indirect employment, supports local suppliers and service providers, attracts investment, and contributes to government revenues through taxes, fees, and potential future royalties if commercial resources are discovered.                                                          |
| <b>SDG 9 – Industry, Innovation and Infrastructure</b> | Promotes investment in offshore infrastructure, advanced drilling technologies, digital monitoring systems, and technical expertise, strengthening industrial capacity and innovation.                                                                                                                     |
| <b>SDG12 – Responsible Production and Consumption</b>  | Encourages efficient use of resources through environmental management systems, waste minimization, chemical management, pollution prevention, and the application of Best Available Techniques (BAT) and industry best practices.                                                                         |
| <b>SDG13 – Climate Action</b>                          | The Project incorporates measures to minimise greenhouse gas emissions, improve energy efficiency and monitor emissions in accordance with regulatory requirements and good international industry practice.                                                                                               |
| <b>SDG14 – Life Below Water</b>                        | Requires the implementation of measures to avoid or minimize impacts on the marine environment, including spill prevention and response planning, discharge controls, marine environmental monitoring, and protection of sensitive habitats and species.                                                   |



| SDG                                       | POTENTIAL CONTRIBUTION OF AN OFFSHORE EXPLORATION WELL                                                                                                                                                                                 |
|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SDG17 – Partnerships for the Goals</b> | Involves collaboration between government authorities, regulators, contractors, research institutions, emergency response organizations, and local stakeholders to ensure safe and environmentally responsible project implementation. |

The Project concerns offshore hydrocarbon exploration. Should commercially viable resources be identified and subsequently developed, the Project could enhance national and regional energy security, promote a more diversified energy portfolio, and support economic activity, employment, and technological advancement, in alignment with the objectives of Sustainable Development Goals (SDGs) 7 (Affordable and Clean Energy), SDG 8 (Decent Work and Economic Growth), and SDG 9 (Industry, Innovation, and Infrastructure). During the exploration phase, the Project will adopt environmental and operational management measures consonant with SDGs 12 (Responsible Consumption and Production) and 14 (Life Below Water), including efficient resource utilisation, pollution prevention, and marine environment protection. Although exploration activities do not directly advance climate change mitigation goals, the Project acknowledges the significance of SDG 13 (Climate Action) and integrates measures to reduce greenhouse gas emissions and other environmental impacts, in accordance with applicable regulatory standards and best international industry practices.

### 5.3.1.2 8th Environment Action Programme (EAP)

Environmental action programs have guided the shaping of EU environmental policy since the early 1970s.

In March 2021, the ambassadors of the EU Member States approved a mandate for the Council to negotiate with the European Parliament to reach an agreement on the 8<sup>th</sup> Environment Action Programme (8<sup>th</sup> EAP). The 8<sup>th</sup> EAP will serve as a guide for the development and implementation of environmental and climate policy until 2030.

The Commission's proposal for the 8<sup>th</sup> Environment Action Programme (8<sup>th</sup> EAP) exceptionally does not include a list of actions but is based on the European Green Deal and the list of actions it contains.

The 8<sup>th</sup> EAP aims to accelerate the green transition in a fair and inclusive manner, with the long-term goal for 2050 of "Well-being within the limits of our planet," as established by the 7<sup>th</sup> EAP.

The six thematic priority objectives of the 8<sup>th</sup> EAP concern:

- the reduction of greenhouse gas emissions.
- adaptation to climate change.
- a development model that gives back to the planet more than it takes.
- the ambition of zero pollution
- the protection and restoration of biodiversity.
- the reduction of key environmental and climate pressures related to production and consumption.

The proposed Project is considered consistent with applicable Best Available Techniques (BAT) and Good Operating Practice (GOP) guidelines, promoting environmental protection practices, applicable to offshore hydrocarbon activities. Furthermore, measures to prevent, minimize, and manage potential environmental impacts have been incorporated into the project design, including waste management procedures and



measures to avoid, address, and remediate accidental pollution incidents, as described in Chapter 11 of this document.

### 5.3.1.3 European Green Deal

Climate change and environmental degradation threaten the very existence of Europe and the world. To address these challenges, the European Green Deal aims to transform the EU into a modern, resource-efficient, and competitive economy, ensuring the following:

- Net zero greenhouse gas emissions by 2050.
- Economic growth decoupled from resource use.
- No person and no region left behind.

One third of the €1.8 trillion investments from the Next Generation EU recovery plan, as well as the EU's seven-year budget, will finance the European Green Deal.

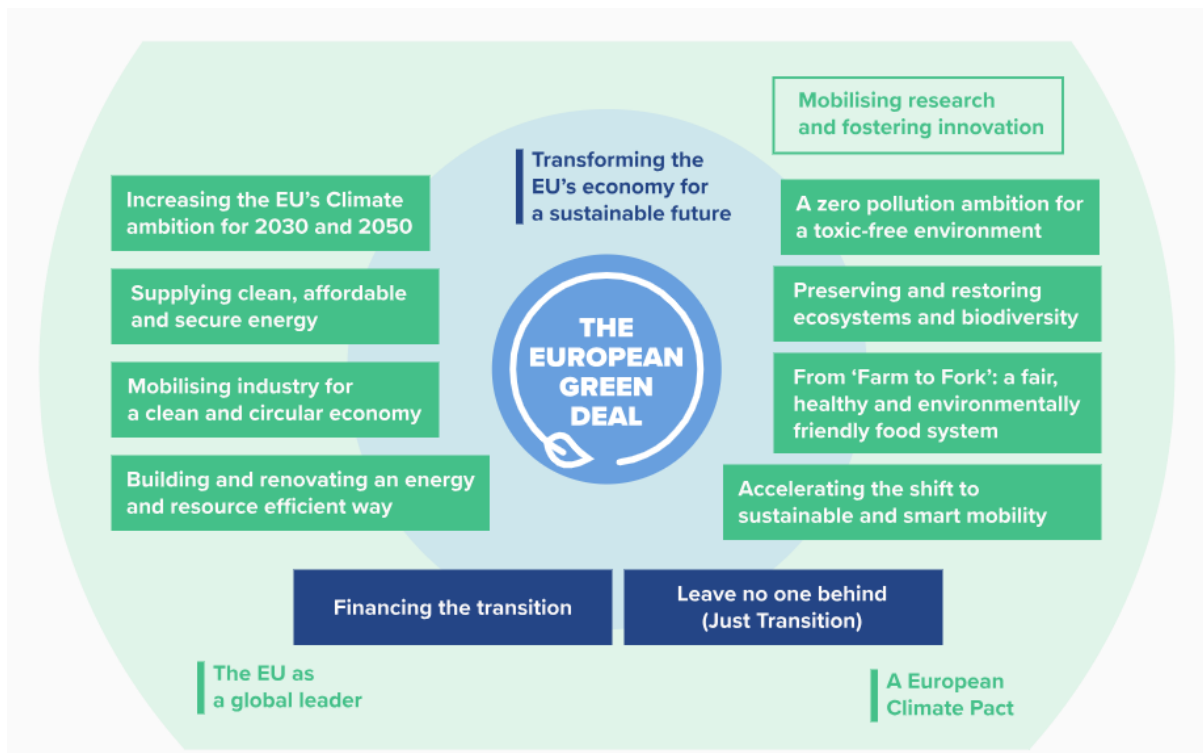
The European Green Deal provides an action plan to enhance resource efficiency by transitioning to a clean, circular economy, restoring biodiversity, and reducing pollution.

The plan outlines the necessary investments and available financing instruments. It explains how a fair and inclusive transition can be ensured.

The EU has set an emblematic goal to become the first climate-neutral continent by 2050. Achieving this goal requires action across all sectors of the economy, such as:

- Investments in environmental technologies.
- Support for innovation in the industrial sector.
- Development of cleaner, more economical, and healthier forms of private and public transportation.
- Decarbonization of the energy sector.
- Ensuring the energy efficiency of buildings.
- Collaboration with international partners to improve global environmental standards.

The following Figure depicts the various elements of the Green Deal as presented in the European Commission Communication, COM (2019) 640.



(Source: European Commission, <https://commission.europa.eu/>)

Figure 5-6: Elements of the European Green Deal

The proposed exploration well does not directly advance the decarbonisation objectives of the European Green Deal. However, the Project has been designed and will be implemented in accordance with applicable EU environmental legislation, incorporating measures to minimise greenhouse gas emissions, prevent pollution, protect the marine environment, and apply recognised best environmental practices. Should commercially viable resources be identified and any subsequent development pursued, such development would be subject to the climate and energy policy framework applicable at that time and may contribute to energy security during the transition to a climate-neutral economy. The Project design also incorporates measures to avoid, minimise, and manage potential environmental impacts, including waste management measures and arrangements for the prevention, response, and, where necessary, remediation of accidental pollution incidents, as described in Chapter 11.

#### 5.3.1.4 Framework for Climate and Energy for 2030

The framework for climate and energy for 2030 includes targets and policy goals at the EU level for the period from 2021 to 2030.

Within the framework of the European Green Deal, the European Commission proposed in September 2020 to increase the greenhouse gas emissions reduction target for 2030 to at least 55% compared to 1990. It examined the actions required across all sectors, including increasing energy efficiency and renewable energy sources, and initiated the process of submitting detailed legislative proposals to implement and achieve this target. This will enable the EU to move towards a climate-neutral economy and fulfill its commitments under the Paris Agreement by updating the Member States' targets.

The Commission proposes that the climate and energy framework for 2030 should be based on the full implementation of the 2020 targets and the following:

- A 40% reduction in greenhouse gas emissions by 2030 compared to 1990 levels, to be achieved through domestic measures only. These measures include a combination of a 43% emissions reduction compared to 2005 under the Emissions Trading System (ETS) as well as national actions by Member States to reduce emissions by 2030 in sectors outside the ETS.
- An increase in the share of energy from renewable sources consumed in the EU to at least 27%, which is binding at the EU level but not at the national level, allowing Member States flexibility to meet their targets in the most cost-effective way.
- Revision of the Emissions Trading System (ETS) through the creation of a new Market Stability Reserve, as well as the limitation of the annual emissions cap after 2020. Alongside this announcement, a legislative proposal was published aiming to establish the reserve.
- Further improvement of energy efficiency, which is essential for competitiveness, energy supply security, and sustainability. A revision of the 2012 Energy Efficiency Directive — later in 2014 — will help define future energy-saving policies.
- New European governance system for achieving climate and energy targets. Member States must develop national plans for competitive, secure, and sustainable energy. These plans will be reviewed and assessed by the Commission.
- Key indicators will be used to monitor progress across all aspects of competitiveness, security, and sustainable energy.

The 40% greenhouse gas reduction target is implemented through the EU Emissions Trading System, the Effort Sharing Regulation, targets for Member States' emission reductions, and regulations on land use, land-use change, and forestry. These climate-related legislative measures must be updated to implement the proposed greenhouse gas reduction target of at least 55%. This process is ongoing, and the targets have not yet been officially revised.

The proposed exploration well is not directly supporting the decarbonization objectives of the Framework for Climate & Energy for 2030. However, the project may contribute to energy security during the transition to a climate-neutral economy, while remaining subject to the EU's environmental and climate policy framework. Additionally, it should be emphasized that the project design will incorporate measures to reduce potential environmental impacts, such as waste management measures and prevention/response/restoration of accidental pollution incidents, as described in Chapter 11 of this document.

### 5.3.1.5 30<sup>th</sup> United Nations Climate Change Conference (COP28)

Every year, the COP meets to set ambitions and responsibilities for climate action, as well as to identify and evaluate climate measures. The 2025 conference was hosted by Brazil, which held the presidency of COP230. The 30<sup>th</sup> United Nations Climate Change Conference (COP30) took place between November 10 – November 21 in Belém, Brazil.

The main topics of COP30 were as follows:

- reducing greenhouse gas emissions.

- adaptation to climate change
- climate finance for developing countries
- renewable energy technologies and low-carbon solutions.
- preserving forests and biodiversity
- climate justice and the social impacts of climate change.

### 5.3.1.6 “Fit for 55” adaptation to the 55% target

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European climate legislation makes it a legal obligation to achieve the EU’s climate target of reducing greenhouse gas emissions by at least 55% by 2030. EU countries are developing new legislation to meet this target and to make the EU climate neutral by 2050.

The “Fit for 55” package is a set of proposals for the revision and update of EU legislation and the establishment of new initiatives, aiming to ensure that EU policies are aligned with the climate targets agreed upon by the Council and the European Parliament.

The package of proposals aims to create a coherent and balanced framework for achieving the EU’s climate targets, which:

- Ensures a fair and socially equitable transition.
- Maintains and strengthens innovation and competitiveness of the EU industry, while ensuring a level playing field with economic operators from third countries.
- Establishes the EU’s position as a global leader in combating climate change.

## 5.3.2 International conventions – EU environmental protection directives

### 5.3.2.1 Habitats Directive (92/43/EEC)

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The Habitats Directive (officially known as Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora) was adopted in 1992 in response to the Bern Convention. The Directive aims to protect approximately 230 habitat types and 1,000 species listed in its Annexes, which are of European interest based on the Directive’s criteria, as follows:

- **Annex I** includes the protected habitat types.
- **Annex II** includes approximately 900 species whose habitats have been designated as Special Areas of Conservation (SACs) and are part of the Natura 2000 network. These areas must be managed according to the ecological requirements of the species.
- **Annex IV** includes more than 400 species that must be subject to strict protection across their natural range within the EU, both inside and outside the Natura 2000 network sites.
- **Annex V** includes more than 90 species for which Member States must ensure that their exploitation and removal from the wild do not adversely affect their favourable conservation status.

Directive 92/43/EEC forms the basis of European nature conservation policy, together with the Wild Birds Directive. It established the extensive European ecological network of protected areas known as Natura

2000 (Special Areas of Conservation – SACs, and Special Protection Areas – SPAs). Certain articles of the Habitats Directive (Articles 6, 12, 16, and 17) require Member States to submit reports on the status and conservation status of habitats and species, the compensatory measures taken for projects that have negative impacts on Natura 2000 sites, or any derogations from the strict protection measures of these areas.

The Habitats Directive was transposed into national legislation through JMD 33318/3028/1998, establishing measures and procedures for the conservation of natural habitats and wild fauna and flora, as amended by JMD 14849/853/E103/4-4-2008. Additionally, Law 3937/2011 on Biodiversity Conservation established the National System of Protected Areas (including Natura 2000 sites), as amended by JMD 50743/2017 (which revised the national list of Natura 2000 sites), along with general guidelines and regulations for their conservation.

As shown in Figure 5-17, no part of the project falls within any Special Areas of Conservation (SACs) within the Natura 2000 network.

The project is consistent with the objectives and relevant requirements of the current Directive, as, based on the current design and planned operations, neither onshore nor offshore activities are anticipated to induce significant adverse impacts on the Conservation Features and associated Conservation Objectives of any surrounding Natura 2000 Special Areas of Conservation (SACs).

### 5.3.2.2 Directive on the Conservation of Wild Birds (2009/409/EC)

The Birds Directive, officially known as Directive 2009/147/EC on the Conservation of Wild Birds, was adopted in 2009 and replaced Directive 79/409/EEC of April 2, 1979, on the conservation of wild birds, which had been amended several times and had become unclear. The Directive aims to protect approximately 500 bird species found in the EU and their critical habitats by designating Special Protection Areas (SPAs) within the Natura 2000 network, regulating activities that directly threaten bird populations, and promoting scientific research.

- **Annex I:** Contains 194 species and subspecies that are particularly threatened, for which Member States must designate Special Protection Areas (SPAs) to ensure their survival. All species listed are migratory.
- **Annex II:** Lists 82 bird species that may be hunted. However, hunting periods are restricted, and hunting is prohibited when the birds are most vulnerable — during their return to breeding areas, breeding, and chick development.
- **Annex III:** Includes activities that directly threaten bird populations and are completely prohibited, such as intentional killing, capture, trade, or destruction of nests. Under specific restrictions, Member States may permit certain activities for the 26 species listed in this annex.
- **Annex IV:** The Directive provides for sustainable hunting management, but Member States must eliminate all forms of non-selective and mass killing of birds, especially the methods listed in this annex.
- **Annex V:** The Directive promotes research to support the protection, management, and exploitation of all bird species covered by the Directive and listed in this annex.

The Birds Directive was transposed into national legislation through Ministerial Decision 414985/1985 on the management measures for wild bird populations, JMD 37338/1807/E.103/2010 establishing

measures and procedures for the conservation of wild birds and their habitats in compliance with Directive 79/409/EEC (as codified by Directive 2009/147/EC), and JMD 8353/276/E103/2012 amending Decision 37338/1807/2010. Furthermore, Law 3937/2011 on biodiversity conservation established the National System of Protected Areas (including Natura 2000 sites), as amended by JMD 50743/2017 (which revised the national list of Natura 2000 sites), along with general guidelines and regulations for their conservation

The Birds Directive was incorporated into national legislation through Ministerial Decision 414985/1985 on the management measures of wild bird species, JMD 37338/1807/E.103/2010 establishing measures and procedures for the conservation of wild bird species and their habitats in compliance with Directive 79/409/EEC, as codified by Directive 2009/147/EC, and JMD 8353/276/E103/2012 amending JMD 37338/1807/2010. Furthermore, Law 3937/2011 on biodiversity conservation established the National System of Protected Areas (including Natura 2000 sites), as amended by JMD 50743/2017 (revision of the national Natura 2000 sites list), along with general guidelines and regulations for their conservation.

As shown in Figure 5-17, no part of the project falls within any Special Protection Areas (SPAs) within the Natura 2000 network.

The Project is considered consistent with the guidelines and objectives of the present Directive as neither onshore nor offshore activities cause significant adverse impacts on the Protected Features nor on the corresponding Conservation Objectives of any relevant SPA areas and do not cause significant adverse effects on the Conservation Features and corresponding Conservation Objectives of any identified SACs.

### 5.3.2.3 Convention on Migratory Species (CMS or Bonn Convention)

The Convention on the Conservation of Migratory Species of Wild Animals—commonly known simply as the Convention on Migratory Species (CMS) or the Bonn Convention—aims to conserve terrestrial, marine, and avian migratory species throughout their migratory range. It is an intergovernmental treaty concluded under the auspices of the United Nations Environment Programme (UNEP) and concerns the conservation of wildlife and habitats on a global scale. The Convention was signed in 1979 in Bonn and entered into force in 1983. The Convention on Migratory Species is the only global intergovernmental organization, established under the United Nations, dedicated exclusively to the conservation and management of terrestrial, aquatic, and avian migratory species throughout their migratory range. The Convention on Migratory Species and its related agreements set policies and provide further guidance on specific issues through Strategic Plans, Action Plans, resolutions, decisions, and guidelines. All Parties maintain on their websites a list of all adopted decisions, guideline issues, and Action Plans approved by the Member States.

The Convention on Migratory Species and its subsidiary agreements (see the table below) establish policy and provide additional guidance on specific issues through Strategic Plans, Action Plans, resolutions, decisions, and guidelines. The subsidiary agreements of the Convention maintain on their respective websites lists of all decisions taken, guidelines, and Action Plans approved by the Member States. Greece ratified the Convention on Migratory Species in 1999 through Law 2719/1999. It should be noted that among the subsidiary agreements of the Convention on Migratory Species, Greece is a Member State of the ACCOBAMS Agreement, which is the main tool for the conservation of cetaceans in the Mediterranean. Additionally, Greece has signed but not yet ratified the AEWA Agreement on the Conservation of Migratory Waterbirds.

**Table 5-10: Subsidiary agreements arising from the Bonn Convention**

| ABBREVIATION             | AGREEMENT                                                                                                                                                                                                  |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ACAP</b>              | Agreement on the Conservation of Albatrosses and Petrels ( <a href="http://acap.aq/">http://acap.aq/</a> )                                                                                                 |
| <b>ACCOBAMS</b>          | Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area ( <a href="http://accobams.org/">http://accobams.org/</a> )                                    |
| <b>AEWA</b>              | Agreement on the Conservation of African-Eurasian Migratory Waterbirds ( <a href="http://www.unep-aewa.org">http://www.unep-aewa.org</a> )                                                                 |
| <b>ASCOBANS</b>          | Agreement on the Conservation of Small Cetaceans of the Baltic, North-East Atlantic, Irish and North Seas ( <a href="http://www.ascobans.org">http://www.ascobans.org</a> )                                |
| <b>EUROBATS</b>          | Agreement on the Conservation of Populations of European Bats ( <a href="http://www.eurobats.org">http://www.eurobats.org</a> )                                                                            |
| <b>Gorilla Agreement</b> | Agreement on the Conservation of Gorillas and their Habitats ( <a href="http://www.cms.int/gorilla">http://www.cms.int/gorilla</a> )                                                                       |
| <b>Wadden Sea Seals</b>  | Agreement on the Conservation of Seals in the Wadden Sea ( <a href="http://www.waddensea-secretariat.org/management/seal-management">http://www.waddensea-secretariat.org/management/seal-management</a> ) |

The Project is compatible with and does not contradict the guidelines and objectives of the CMS Convention.

#### 5.3.2.4 Agreement on the Conservation of Cetaceans in the Black Sea, Mediterranean Sea, and Contiguous Atlantic Area (ACCOBAMS)

The Agreement on the Conservation of Cetaceans in the Black Sea, the Mediterranean, and the Contiguous Atlantic Area (ACCOBAMS) is a cooperation tool for the conservation of marine biodiversity in the Mediterranean and Black Seas. The purpose of the Agreement is to reduce threats to cetaceans in the waters of the Mediterranean and Black Seas, as well as to improve the existing knowledge. According to the ACCOBAMS Conservation Plan (Annex 2 of the Agreement), the contracting Parties are called upon to designate and manage areas that serve as habitats for cetaceans as specially protected areas.

ACCOBAMS emerged from consultations among the following four conventions:

- The Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean and its Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean,
- The Bonn Convention for the Conservation of Migratory Species of Wild Animals,
- The Bern Convention for the Conservation of European Wildlife and Natural Habitats.

Due to the migratory nature of these species, the agreement was established under the auspices of the Bonn Convention (UNEP/CMS).

The Agreement area consists of all marine waters of the Black Sea, the Mediterranean Sea, and the adjoining area of the Atlantic Ocean west of the Strait of Gibraltar. The area includes the Pelagos Sanctuary, which is dedicated to marine mammals in the northwestern Mediterranean and was established by France, Italy, and Monaco. ACCOBAMS is the first agreement to bind the countries of these regions to cooperate in the conservation of cetaceans. An innovative aspect of this agreement is the inclusion of non-coastal countries whose maritime activities may endanger the conservation of cetaceans.

In 2010, the Parties to ACCOBAMS adopted a resolution to extend the geographic scope of the Agreement area to include the Exclusive Economic Zones of Spain and Portugal. As of 2022, the Agreement has 24



Parties: Albania, Algeria, Bulgaria, Croatia, Cyprus, Egypt, France, Georgia, Greece, Italy, Lebanon, Libya, Malta, Monaco, Montenegro, Morocco, Portugal, Romania, Slovenia, Spain, Syria, Tunisia, Turkey, and Ukraine.

In 2023, pursuant to GG 9/A/17.01.2023, Greece ratified the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area, along with the related Final Act of the Agreement, signed in Monaco on 24 November 1996, as well as the amendments adopted by the Meeting of the Parties to the Agreement on 12 November 2010 in Monaco through Resolution A/4.1.

According to Article 4 of Annex II of the present GG, the Contracting Parties undertake coordinated, joint research on cetaceans and facilitate the development of new techniques to enhance their conservation. In particular, the Contracting Parties:

- monitor the status and trends of the species covered by this Agreement, particularly those in poorly known areas or species for which data is limited, in order to facilitate the development of conservation measures,
- cooperate to identify migratory routes as well as breeding and feeding areas of the species covered by the Agreement, in order to determine areas where human activities may need to be regulated as a result,
- assess the dietary needs of the species covered by the Agreement and accordingly adjust fishing regulations and techniques,
- develop systematic research programs for dead, stranded, injured, or sick animals, in order to determine the main interactions with human activities and to identify existing and potential threats and
- facilitate the development of passive acoustic techniques for monitoring cetacean populations.

According to the ACCOBAMS Methodological Guide on "Underwater Noise Mitigation Measures" published in 2022 (ACCOBAMS-MOP8/2022/Inf44), recommended measures are defined for mitigating the impacts of underwater noise from human activities.

According to this Guide, as well as the EU Marine Strategy Framework Directive, underwater noise generated by human activities is categorized as impulsive noise (e.g., noise from drilling operations) and continuous noise (e.g., from vessel movement). The Guide describes practices and technologies that should be used during, instead of, or in addition to conventional techniques that produce underwater noise, with the aim of reducing the acoustic impacts of human activities at sea.

The Project is compatible with and does not contradict the guidelines and objectives of this Convention, since neither the onshore nor the offshore parts of the Project, as shown in the Figure below, fall within any ACCOBAMS cetacean critical habitats or pelagos sanctuaries for marine mammals.

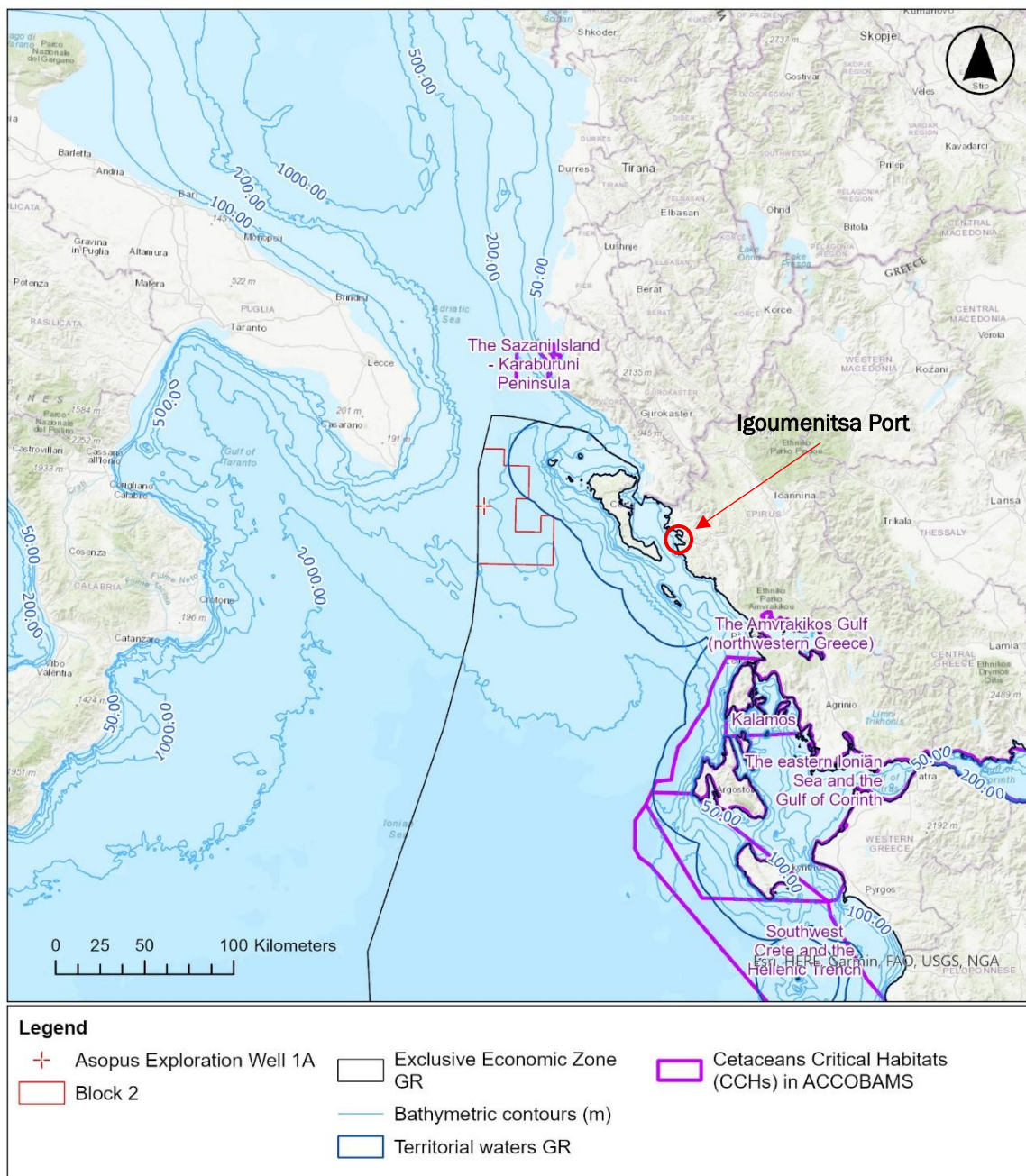


Figure 5-7: Critical habitats for cetaceans in the wider study area (Source: LDK).

### 5.3.2.5 Agreement on the conservation of African – Eurasian Migratory Waterbirds (AEWA Convention)

The Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) is an intergovernmental treaty dedicated to the conservation of migratory waterbirds and their habitats across Africa, Europe, the Middle East, Central Asia, Greenland and the Canadian Archipelago. Developed under the framework of the Bonn Convention (CMS) and administered by the United Nations Environment Programme (UNEP), AEWA brings together countries and the wider international conservation community in an effort to establish coordinated conservation and management of migratory waterbirds throughout their entire migratory range.

The Map of the Agreement Area as presented in below is included in the text of the Agreement on the Conservation of African – Eurasian Migratory Waterbirds as amended at the 9<sup>th</sup> Session of the Meeting of the Parties to AEWA 11-14 November 2025 in Bonn, Germany (MOP9)<sup>19</sup>.

**Annex 1 a**  
**Map of the Agreement Area**



**Figure 5-8: Map of the Agreement Area (Source: Agreement on the Conservation of African - Eurasian Migratory Waterbirds - Agreement Text and Annexes as amended by MOP9)**

### 5.3.2.6 Bern Convention

The Bern Convention for the Conservation of Wildlife and Natural Habitats of Europe, also known simply as the Bern Convention, is an international legal instrument in the field of Nature Conservation, aimed at protecting the natural heritage of Europe and certain countries in Africa. The Convention was signed on September 19, 1979, and came into force on June 1, 1982. It specifically concerns the protection of natural habitats and endangered species, including migratory species.

The convention primarily aims at the following:

<sup>19</sup> [Agreement on the Conservation of African - Eurasian Migratory Waterbirds - Agreement Text and Annexes as amended by MOP9](#)

- The conservation of wild flora and fauna and their natural habitats,
- The promotion of cooperation between states,
- Focusing attention on endangered and vulnerable species, including threatened and vulnerable migratory species.

The Convention also considers the impacts that other policies may have on natural heritage and recognizes the intrinsic value of wild flora and fauna, which must be preserved and passed on to future generations. Fifty countries and the EU have already signed the Convention and are committed to promoting national conservation policies, assessing the environmental impacts of planning and development, promoting education and awareness for conservation, and coordinating related research activities. Greece signed the Convention in 1979 and ratified it with Law 1335/1983.

The Project is compatible with and does not conflict with the guidelines and objectives of the Bern Convention.

### 5.3.2.7 Convention on Biological Diversity (CBD)

The Convention on Biological Diversity (CBD), informally known as the Biodiversity Convention, is a multilateral treaty. The Convention has three main objectives:

- Conservation of biodiversity,
- Sustainable use of its components, and
- Fair and equitable sharing of the benefits arising from genetic resources.

The goal of the Convention is the development of national strategies for the conservation and sustainable use of biological diversity. The Convention is often considered the key document for sustainable development. It was signed at the Earth Summit in Rio de Janeiro in June 1992 and entered into force on December 29, 1993. For the first time in international law, the Convention recognized that the conservation of biodiversity is “a common concern of humanity” as well as an integral part of development. The Convention covers all ecosystems, species, and genetic resources. It links conservation efforts with the economic goal of using biological resources in a sustainable way. It establishes principles for the fair and equitable sharing of benefits arising from the use of genetic resources, especially those intended for commercial use. It should be noted that the Convention is legally binding, and the countries that ratify it (“Contracting Parties”) are obligated to implement its provisions.

Greece signed the Convention in June 1992 and ratified it with Law 2204/1994. According to the requirements of the CBD, Greece approved its first National Biodiversity Strategy in 2014 (Ministerial Decision 40332/2014) aiming to halt biodiversity loss and the degradation of ecosystem services by 2026. The strategy’s implementation period is 15 years (2014–2029) and consists of 13 general national objectives, based on which 39 specific targets have been formulated concerning the following: (i) enhancement of scientific knowledge, (ii) conservation of national natural capital, (iii) national system of protected areas, (iv) conservation of genetic resources, (v) synergistic policies for biodiversity conservation, (vi) conservation of landscape diversity, (vii) biodiversity and climate change, (viii) biodiversity and invasive alien species, (ix) international and transboundary conservation, (x) public administration and biodiversity protection, (xi) integration of biodiversity conservation into societal value systems, (xii) public participation in



biodiversity conservation, and (xiii) assessment of ecosystem services and promotion of the importance of Greek biodiversity. The 13 general national objectives of Greece correspond both to the Aichi Biodiversity Targets and to the EU Biodiversity Goals. The strategy is expected to be revised and amended every five years, with action plans developed on a five-year basis. Actions have been set to achieve the 39 specific targets during the first five-year period (2014–2019), along with some indicative implementation indicators. The Ministry of Environment and Energy is the competent authority responsible for the implementation of the National Biodiversity Strategy.

The Project is compatible with and does not conflict with the guidelines and objectives of the Biodiversity Convention.

### 5.3.2.8 Ramsar Convention

The Convention on Wetlands of International Importance, especially as Waterfowl Habitat, known as the "Ramsar Convention" — named after the Persian city where it was signed in 1971 — provides for the protection of wetland ecosystems.

*According to Article 1 of the Convention, wetlands are defined as: "...natural or artificial areas consisting of marshes with herbaceous vegetation, non-exclusively rain-fed marshes with peat substrate, peatlands, or water. These areas are permanently or temporarily flooded with water, which may be stagnant or flowing, fresh, brackish, or salty, and also include those covered by seawater with a depth at low tide not exceeding six meters. Wetlands may also include riparian or coastal zones adjoining wetlands or islands or marine water bodies that are deeper than six meters at low tide..."*

The Convention was ratified by Greece through Legislative Decree 191/1974 (GG 350/A/20.11.1974), which was later amended by Law 1751/1988 (GG 26/A/02.09.1988) and Law 1950/1991 (GG 84/A/31.05.1991) "On the Ratification of the Amendments to the Ramsar Convention. "The Greek wetlands designated as wetlands of international importance (Ramsar wetlands) since August 21, 1975, are 10 and cover an area of 1,635,010 square meters.

It should be noted that by signing and ratifying the Ramsar Convention, Greece has committed to the conservation and sustainable use of all its wetlands through local, regional, and international activities and collaborations.

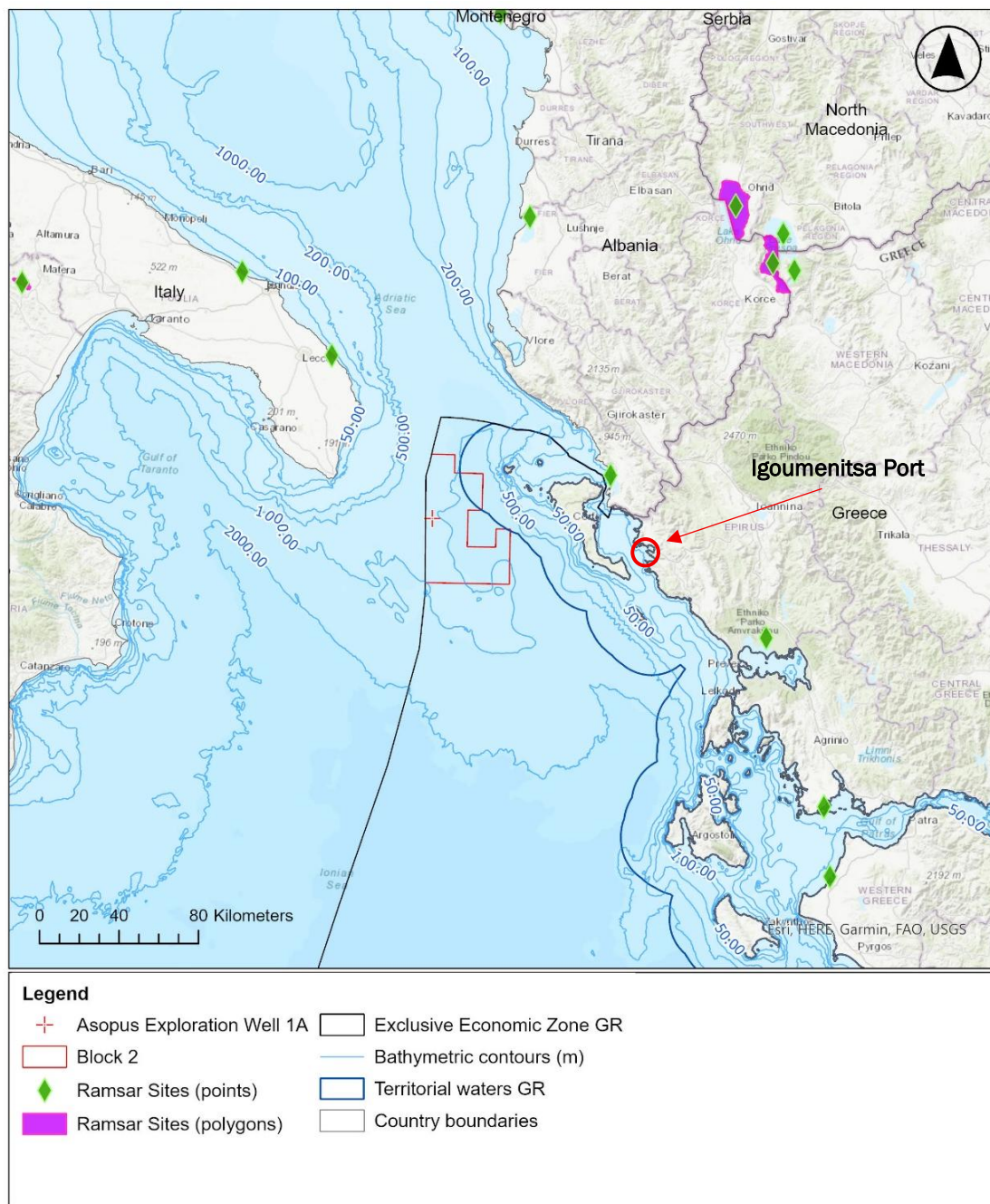


Figure 5-9: Ramsar sites in the broader study area (Source: LDK).

The Project is compatible with and does not conflict with the guidelines and objectives of the present Convention, since neither the onshore nor the offshore parts of the Project fall within any Ramsar Wetland, as presented in Figure 5-9.

### 5.3.2.9 Agreement for the Establishment of the General Fisheries Commission for the Mediterranean (GFCM)

The Agreement for the Establishment of the General Fisheries Commission for the Mediterranean (GFCM) is a binding international treaty established under Article XIV of the Food and Agriculture Organization (FAO)

Constitution. It was adopted in 1949 and entered into force in 1952. The treaty's primary objective is to ensure the long-term conservation and sustainable use of marine living resources, as well as the protection of marine ecosystems across the Mediterranean and Black Sea regions. To that direction the GFCM 2030 Strategy has been implemented to provide a shared vision for achieving sustainable fisheries and aquaculture in the Mediterranean and Black Sea. It aligns national, regional, and global commitments and addresses the environmental, economic, and social dimensions of sustainability, with a strong focus on building resilience to future challenges.

The Strategy is organized around five strategic targets:

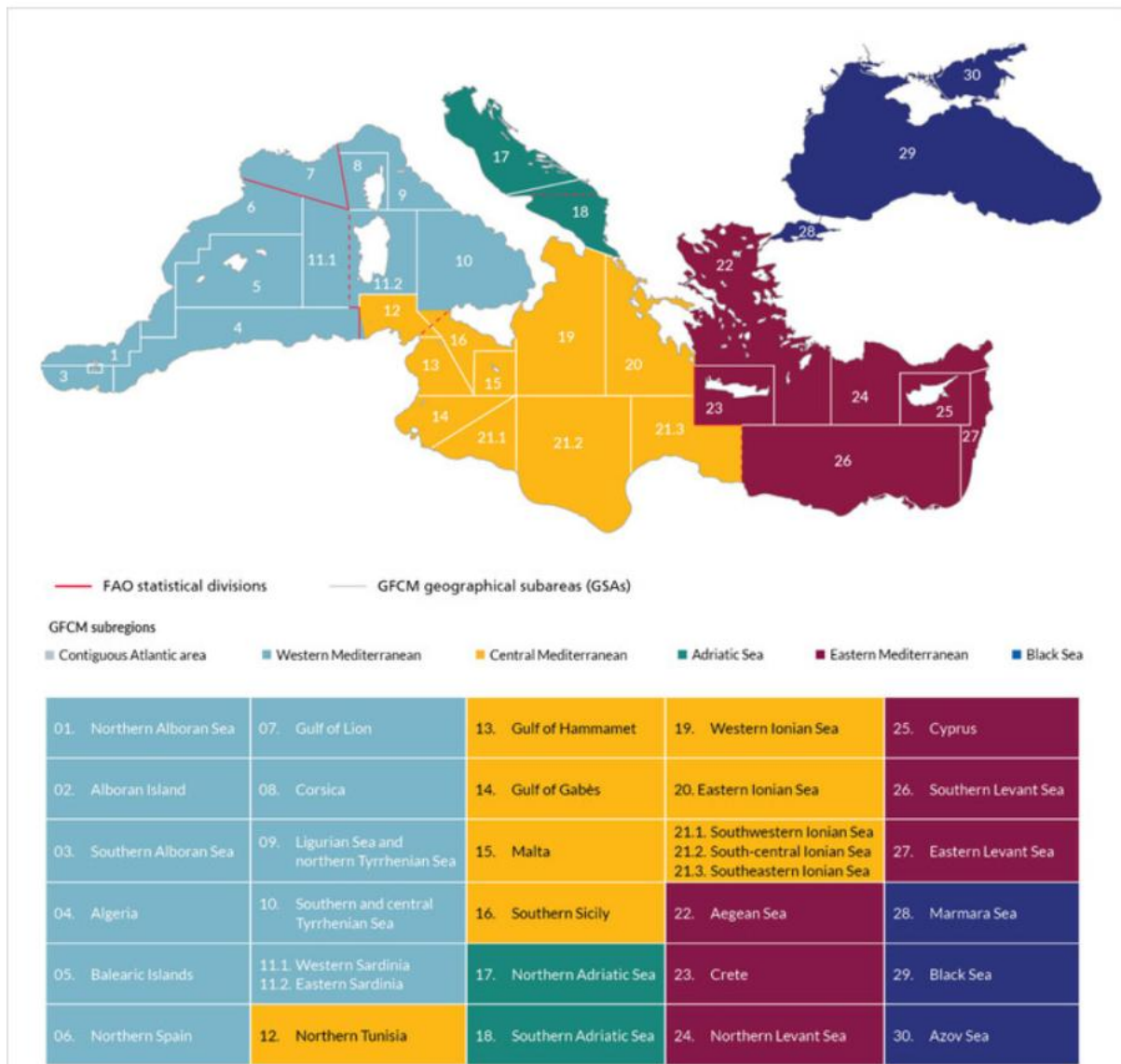
44. **Healthy Seas and Sustainable Fisheries** - Promotes an ecosystem-based approach to fisheries management by conserving biodiversity, improving scientific research and data collection, and ensuring fish stocks are harvested at sustainable levels.
45. **Compliance and Enforcement** - Strengthens monitoring, control, and enforcement systems to combat illegal, unreported, and unregulated (IUU) fishing. It seeks to harmonize compliance measures across countries and ensure that only legally caught fish enter markets.
46. **Sustainable and Resilient Aquaculture** - Supports responsible growth of aquaculture through improved governance, investment frameworks, technological innovation, and the sharing of best practices, while enhancing the sector's resilience and sustainability.
47. **Improved Livelihoods and Decent Employment** - Aims to increase the profitability and long-term viability of fisheries, particularly small-scale fisheries, by improving incomes, diversifying economic activities, strengthening social protection, and encouraging stakeholder participation in management decisions.
48. **Capacity Development and Partnerships** - Enhances technical cooperation, knowledge sharing, and collaboration among governments, fishers, researchers, NGOs, and other stakeholders. It focuses on building national and subregional capacities to effectively implement GFCM commitments and ensure consistent standards across the region.

The GFCM is taking a subregional approach to achieve sustainable fisheries and aquaculture development in the Mediterranean and Black Sea.

The technical units promote cooperation and facilitate dialogue on major issues and cross-border challenges, considering the needs and characteristics of each subregion. In practical terms, the units provide strategic and technical assistance to help countries effectively meet their commitments to the GFCM.

Its area of application is divided into five subregions: the western, central and eastern Mediterranean, the Adriatic Sea and the Black Sea as presented in Figure 5-10 .

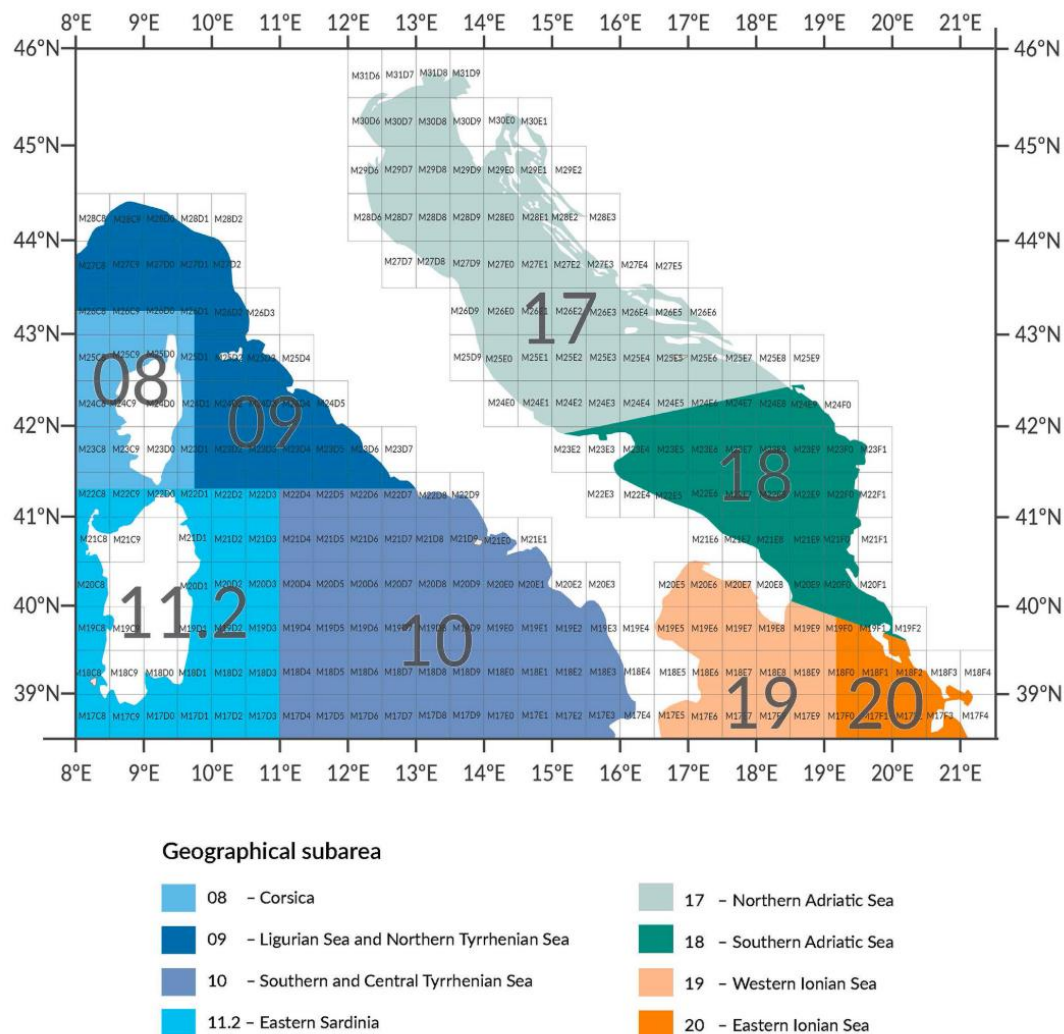




**Figure 5-10: GFCM subregions (Source: Food and Agriculture Organization of the United Nations)**

These subregions are then divided into 30 geographical subareas (GSAs). The Project area falls within GSA 19 – Western Ionian Sea as presented in Figure 5-11 below.

Greece became a contracting party to the General Fisheries Commission for the Mediterranean (GFCM) shortly after the Agreement entered into force by depositing its instrument of acceptance on 7 April 1952. As a member, Greece participates in regional cooperation for the conservation and sustainable management of fisheries resources in the Mediterranean and Black Sea and is bound by the Commission's applicable conservation and management measures. The country also participates in the implementation of subsequent amendments to the GFCM Agreement adopted under its legal framework.



**Figure 5-11: GSA in the broader study area (Source: Food and Agriculture Organization of the United Nations)**

Partnerships are crucial to the work of the GFCM, both to implement actions on the ground and to share and develop knowledge and best practices across the region. Partners with a memorandum of understanding are the following:

- [ACCOBAMS](#) – Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area
- [AOAD](#) – Arab Organization for Agricultural Development
- [ATLAFCO](#) – Ministerial Conference on Fisheries Cooperation Among African States Bordering the Atlantic Ocean
- [Black Sea Commission](#) – The Commission on the Protection of the Black Sea Against Pollution
- [CIHEAM-IAMZ](#) – Mediterranean Agronomic Institute of Zaragoza (IAMZ) of the International Centre for Advanced Agronomic Mediterranean Studies (CIHEAM)
- [Eurofish](#) – International Organisation for the Development of Fisheries in Central and Eastern Europe
- [ICES](#) – International Council for the Exploration of the Sea
- [INFOSAMAK](#) – Centre for Marketing, Information and Advisory Services for Fishery Products in the Arab

#### Region

- [IUCN-Med](#) – International Union for Conservation of Nature – Centre for Mediterranean Cooperation
- [Med-AC](#) – Mediterranean Advisory Council
- [MedPAN](#) – Network of Marine Protected Area Managers in the Mediterranean
- [NEAFC](#) – North-East Atlantic Fisheries Commission
- [OceanCare](#)
- [UfM](#) – Union for the Mediterranean
- [UNEP-MAP](#) – United Nations Environment Programme – Mediterranean Action Plan for the Barcelona Convention
- [WWF](#) – World Wide Fund for Nature.

#### 5.3.2.10 European Council Regulation (EC) 2371/2002 on the conservation and sustainable exploitation of fisheries resources under the Common Fisheries Policy

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The Council Regulation (EC) No 2371/2002 of 20 December 2002 on the conservation and sustainable exploitation of fisheries resources under the Common Fisheries Policy has application to the conservation of common dolphins in the Mediterranean. This arises from the powers and duties the Regulation provides to EC institutions regarding fisheries conservation (coupled with integration of environmental protection requirements) and from the powers the Regulation provides to Member States (coupled with the access restriction in case of waters within 12 nautical miles of coastal Member States’).

### 5.3.3 National Environmental Protection Objectives Relevant to the Project

#### 5.3.3.1 National Climate Law (Law 4936/2022)

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The National Climate Law (Law 4936/2022, GG A' 105) establishes a modern framework for climate change adaptation in Greece. It introduces measures and policies to strengthen adaptation to climate change, procedures for their evaluation and the adoption of additional measures, as well as a governance and stakeholder participation framework to support climate action.

49. Articles 4, 5, and 6 of the National Climate Law provide for the preparation, evaluation, and periodic revision of the National Strategy for Climate Change Adaptation (NASCCA) by the Ministry of Climate Crisis and Civil Protection, as well as the preparation, evaluation, and revision of the 13 Regional Climate Change Adaptation Plans (RAPs) by the respective Regional Authorities. Article 34 establishes transitional provisions for the approval of Regional Adaptation Plans whose preparation had already commenced under the previous legislative framework.
50. Article 9 sets out additional adaptation actions and resilience measures, requiring all central government bodies to integrate climate change adaptation into their strategic and operational planning through appropriate adaptation and resilience-building actions. Furthermore, Article 10 enables the adoption and implementation of policies and measures to strengthen resilience and reduce climate vulnerability across all sectors of the economy, the natural environment, and biodiversity.

51. Article 18 strengthens the integration of climate change adaptation into the environmental permitting process by requiring Environmental Impact Assessments (EIAs) to include an assessment of the project's vulnerability to climate change. Specifically, EIAs must describe climate-related hazards, undertake a climate risk assessment, evaluate potential impacts, and identify measures to enhance the resilience of the project under both current and future climate conditions.
52. Article 25 establishes the National Observatory for Climate Change Adaptation within the Ministry of Climate Crisis and Civil Protection. The Observatory serves as an open information-sharing and knowledge platform involving the Ministries of Climate Crisis and Civil Protection, Environment and Energy, Interior, the Hellenic National Meteorological Service, the National Observatory of Athens, and other research, academic, and public institutions.
53. Article 27 requires the preparation of an annual progress report, including a description of adaptation actions and progress achieved across different sectors.
54. Finally, Article 28 establishes the National Council for Climate Change Adaptation, which serves as the State's principal advisory body responsible for coordinating, monitoring, adopting, and evaluating climate change adaptation policies. Article 29 establishes the Scientific Committee on Climate Change within the Ministry of Environment and Energy, which acts as the Government's technical and scientific advisory body on climate change adaptation and mitigation.

The Project has considered the requirements and objectives of the National Strategy for Climate Change Adaptation (NSCCA) and the Regional Adaptation Plan (RAP) of Epirus in its design and impact assessment process. Climate-related risks, vulnerabilities and adaptation measures have been assessed as part of the ESIA, and appropriate measures have been incorporated into the Project design where relevant. On this basis, the Project is considered consistent with the objectives of the NSCCA and the RAP and is not expected to conflict with their implementation.

### 5.3.3.2 National Strategy for Climate Change Adaptation (onshore facilities)

Articles 42–44 of Law 4414/2016 established the initial institutional framework for climate change adaptation, the key elements of which included the National Strategy for Climate Change Adaptation, the Regional Climate Change Adaptation Plans, the National Council for Climate Change Adaptation, and the Special Scientific Committee for Climate Change Mitigation.

*Article 45 of Law 4414/2016 approved the first National Strategy for Climate Change Adaptation (NASCCA).* The NASCCA sets out the general objectives, guiding principles, and implementation tools of a modern, effective, and development-oriented adaptation strategy to climate change, within the framework defined by the United Nations Framework Convention on Climate Change, European policies, and international experience. NASCCA proposes indicative adaptation actions and measures covering a broad range of environmental, economic, and social sectors that are expected to be significantly affected by climate change.

The NASCCA is implemented through 13 Regional Climate Change Adaptation Plans (RAPs). The RAPs specify the directions of the NASCCA by assessing climate vulnerability and defining appropriate adaptation actions and measures, based on the specific characteristics of each Region.

Articles 42–44 of Law 4414/2016 have now been repealed; however, their provisions concerning the NASCCA, the RAPs, and the National Council for Climate Change Adaptation have been largely retained and incorporated into Articles 4, 5, 6, and 28 of the National Climate Law (Law 4936/2022). At the same time, the Special Scientific Committee for Climate Change Mitigation was transformed into the Scientific Committee on Climate Change (Article 29 of the National Climate Law), expanding its mandate to include climate change mitigation issues.

Within the framework of the National Climate Law (Articles 9 and 10), further promotion is made of climate change adaptation and resilience-building at sectoral level, in line with the relevant provisions of the European Climate Law. Specifically, an obligation is introduced for central administration bodies to integrate climate change adaptation into their strategic and operational planning, while also enabling the implementation of measures and policies to strengthen resilience and reduce vulnerability across all sectors of the economy and the natural environment.

In addition, Article 25 of the National Climate Law establishes the National Observatory for Climate Change Adaptation, part of which will be the present National Information Web Portal for Climate Change Adaptation.

National Strategy for Climate Change Adaptation (NASCCA) aims to establish a coordinated national framework for enhancing Greece's resilience to climate change. Its main objectives are to:

- improve and systematise decision-making processes related to climate change adaptation in both the short and long term;
- integrate climate change adaptation into sustainable development through regional and local action plans;
- promote adaptation measures and policies across all sectors of the Greek economy, with particular emphasis on the most climate-vulnerable sectors;
- establish mechanisms for monitoring, evaluating, and periodically updating adaptation measures and policies; and
- strengthen the adaptive capacity of Greek society through awareness-raising, education, and stakeholder engagement.

The current NASCCA identifies indicative adaptation measures and actions for 15 priority sectors:

- Agriculture and livestock;
- Forestry;
- Biodiversity and ecosystems;
- Fisheries;
- Aquaculture;
- Water resources;
- Coastal zones;
- Tourism;
- Energy;
- Infrastructure and transport;
- Human health;

- Built environment;
- Extractive industries;
- Cultural heritage; and
- Insurance.

The NASCCA is a strategic policy document that provides national guidance and establishes the overall direction for climate change adaptation. It does not prescribe detailed sector-specific policies or prioritise adaptation measures at the local or regional level. These functions are undertaken through the Regional Climate Change Adaptation Plans (RAPs), which translate the Strategy into region-specific priorities and actions based on local climate vulnerabilities.

Under Article 3 of Law 4936/2022, which replaced the former Article 42 of Law 4414/2016, the NASCCA must include, as a minimum:

- an analysis of the Strategy's objectives and guiding principles in accordance with international agreements and European Union climate policy;
- an assessment of projected climate change under different climate scenarios, including vulnerability analyses of economic sectors, social activities, and the natural and built environment, together with an assessment of the associated socio-economic impacts;
- identification of priority sectors requiring adaptation measures, including proposals for adaptation actions relating, at a minimum, to health, tourism, agriculture, livestock, forestry, energy, insurance, infrastructure and transport, the built environment, biodiversity, ecosystems, water resources, coastal zones, and cultural heritage;
- a preliminary assessment of adaptation costs;
- integration of climate adaptation into broader national policies;
- consideration of the international dimension of adaptation policy; and
- proposals for awareness-raising, education, and research activities.

This framework ensures that climate change adaptation is systematically incorporated into national, regional, and sectoral planning and provides the basis for integrating climate resilience into projects requiring Environmental Impact Assessment (EIA).

The Regional Plans for Climate Change Adaptation (RePCCA), based on the climate conditions and vulnerability of each region, precisely determine the policy sectors and geographic priority areas for action, specifying the measures, financial instruments for implementation, responsible bodies, and involved stakeholders.

The objectives of the Regional Climate Change Adaptation Plan (RAP) for the Region of Epirus are based on the European Union and national climate change adaptation strategies and are aimed to:

1. Analyse the sector-specific policies required for climate change adaptation;
2. Assess the feasibility of individual adaptation measures and actions at the local and regional levels;
3. Select the most appropriate adaptation measures;
4. Prioritise the proposed adaptation measures and actions;



5. Establish an implementation timetable;
6. Identify funding sources and implementation mechanisms; and
7. Apply indicators and other monitoring tools to assess the implementation and effectiveness of adaptation measures.

The Epirus RAP places particular emphasis on sectors considered to be of strategic importance to the Region, namely:

- agriculture;
- the experience economy (tourism);
- transport infrastructure;
- forestry

The proposed Project is considered consistent with the directions and objectives of both the National Strategy for Climate Change Adaptation (NSCCA) and the Regional Plan for Climate Change Adaptation (RAP) of Epirus and advances their goals.

### 5.3.3.3 National Energy and Climate Plan

*By Decision 3/18.12.2024 of the Government Council for Economic Policy (GG B' 4893), the National Energy and Climate Plan (NECP) was ratified.*

The National Energy and Climate Plan (NECP) constitutes the Greek Government's principal strategic framework for climate and energy policy. It provides a comprehensive roadmap for achieving specific national energy and climate targets by 2030. The NECP sets out priorities and policy measures across a broad range of economic and development sectors, with the aim of supporting sustainable economic growth, enhancing energy security, and facilitating Greece's transition to a low-carbon economy. As such, it serves as the key national reference document for energy and climate policy over the current decade.

Complementing the NECP is the Long-Term Strategy for 2050, which provides a strategic roadmap for climate and energy policy beyond 2030. The Long-Term Strategy supports Greece's contribution to the European Union's objective of achieving a climate-neutral economy by 2050 and builds upon the successful implementation of the NECP and the achievement of its 2030 targets.

The main targets of the NECP for 2030 are as follows:

- Share of RES > 35% of Gross Final Energy Consumption
- Share of RES 61–64% of Gross Final Electricity Consumption
- Final Energy Consumption 16.1–16.5 Mtoe (>38% compared to 2007 projections)
- Zero lignite participation in electricity generation
- 42% GHG reduction compared to 1990, >56% compared to 2005

The NECP prioritizes, in terms of planned policies and implementation of specific measures, the achievement of specific targets regarding energy supply security, the operation of energy markets and the role of consumers, the enhancement of the competitiveness of the economy, as well as the promotion of research and innovation actions.



Specifically, the NECP sets for 2030 significantly higher central targets for climate change and emissions, with reductions exceeding 42% compared to 1990 emissions and over 56% compared to 2005 emissions, even surpassing central European targets. It is noteworthy that in the initial NECP draft, these targets were significantly lower, resulting in reductions of 33% and 49%, respectively. These new targets are also necessary to enable the transition to a climate-neutral economy by 2050, as the Greek Government aims to participate proportionally in the commitment for a climate-neutral economy at the EU level.

At the same time, regarding Climate Change and adaptation policies, the NECP presents the initiatives to be undertaken within the framework of the National Strategy for Climate Change Adaptation (NSCCA), which defines general objectives, guiding principles, and the tools for implementing necessary climate adaptation measures at national, regional, and local levels.

To achieve the above targets, the NECP text presents and analyzes the individual Policy Priorities for the next period as well as the corresponding Policy Measures designed to implement the priorities and achieve the NECP targets, across seven thematic areas:

- Climate Change, GHG Emissions and Removals
- Renewable Energy Sources
- Energy Efficiency Improvement
- Energy Supply Security
- Energy Market
- Agriculture, Shipping, Tourism (new thematic area)
- Research, Innovation, and Competitiveness

Regarding the specific Project, according to the NECP, the recognition of potential and the optimal economic utilisation of domestic energy sources is a key objective and priority for the development of the national energy system. Although under a different policy approach and planning logic, the exploration for the extraction and exploitation of domestic hydrocarbon deposits continues to constitute a pillar of energy policy for the coming period and is integrated into the broader framework of the utilisation of domestic energy resources.

Moreover, further on the hydrocarbon E&P field, measures and policies for energy security have been established mainly highlighting the development of domestic hydrocarbon deposits as Greece continues to be an emerging market in the exploration and production of natural gas in the Eastern Mediterranean. Both the hydrocarbons exploration and exploitation programme in Greece, as well as the transnational pipeline projects TAP (Trans Adriatic Pipeline), the Greece–Bulgaria interconnector (IGB), and the EastMed pipeline, constitute important projects that strengthen the diversification of the EU energy supply and ensure security of supply in order to reduce energy dependence on third countries.

The State places particular emphasis on issues of safety related to hydrocarbon exploration and exploitation and, by extension, environmental protection. Environmental risks are assessed by the competent services of the Ministry of Environment and Energy, which sets the terms and conditions and approves the execution stages.

The Hellenic Hydrocarbons and Energy Resources Management Company SA (EDEYEP), as the competent authority, monitors, among other things, the implementation of these contractual obligations by contractors

and their partners and intervenes in cases of deviations from any party. A conservative estimate of the potential and probable reserves in these areas, where no exploration drilling has yet been carried out, ranges at 24 trillion cubic feet (Tcf) or 680 bcm, according to preliminary data from EDEYEP. The possible confirmation of these deposits would fully cover both current and future domestic hydrocarbon demand, rendering the country an exporter by the end of the decade.

Complementary to the NECP, the Long-Term Strategy for 2050 (LTS 2050) is developed, constituting a roadmap for Climate and Energy issues within Greece's participation in the collective European target of a successful and sustainable transition to a climate-neutral economy by 2050 at the EU level.

The Long-Term Strategy toward 2050 climate neutrality includes key policies categorized into the following axes:

- Energy Efficiency Improvement
- Electrification of Transport and Heat
- Renewable Energy Sources
- Clean Mobility in Transport
- Industrial Competitiveness and Climate Neutrality
- Infrastructure in Networks and Market Integration Policies
- Bioeconomy

The proposed offshore hydrocarbon exploration project is broadly consistent with the objectives of Greece's National Energy and Climate Plan (NECP) by supporting the security and diversification of the national energy supply during the transition towards a climate-neutral economy. While the NECP prioritises the accelerated deployment of renewable energy and the reduction of greenhouse gas emissions, it also recognises the importance of maintaining energy security and resilience throughout the transition. The project seeks to evaluate potential domestic hydrocarbon resources, which could contribute to reducing reliance on imported fossil fuels in the event of a commercial discovery.

The exploration activities will be undertaken in accordance with applicable national and European environmental legislation, incorporating measures to minimise greenhouse gas emissions, prevent pollution, and protect the marine environment, thereby supporting the NECP's broader objectives of sustainable energy development and environmental protection.

#### 5.3.3.4 National Maritime Spatial Strategy (NMSS)

The National Maritime Spatial Strategy (NMSS), approved by Act of the Cabinet 6/17.04.2025 (GG D 227/2025), constitutes the highest-level strategic planning instrument for Greece's maritime space and forms an integral part of the National Spatial Strategy established under Law 4447/2016. The NMSS establishes:

- strategic directions for offshore energy;
- coexistence of maritime uses;
- protection of marine ecosystems;
- fisheries and aquaculture considerations;

- maritime transport corridors;
- marine cultural heritage;
- cross-border maritime interactions

In a nutshell the strategy provides the long-term vision, strategic objectives, and guiding principles for the sustainable organization, management, and development of Greece's marine areas, while ensuring coherence between maritime and terrestrial planning. It provides a framework for balancing economic development, environmental protection, social interests, and national priorities within the maritime domain. The Strategy addresses the interactions between marine and coastal areas and promotes the coordinated management of activities that have spatial implications at sea.

To achieve this, it identifies maritime spatial units as the basis for future Maritime Spatial Planning Frameworks and sets priorities for their preparation. The NMSS also seeks to ensure the coexistence and compatibility of multiple maritime uses, including maritime transport and ports, fisheries, aquaculture, tourism and recreation, offshore energy development, submarine cables and pipelines, marine mineral and hydrocarbon resources, defense and security activities, and scientific research.

At the same time, it incorporates environmental objectives relating to the protection of marine ecosystems, biodiversity, Natura 2000 sites, marine protected areas, cultural and underwater heritage, climate-change adaptation, ecosystem resilience, and the achievement of Good Environmental Status under the Marine Strategy Framework Directive. Furthermore, the Strategy promotes integrated coastal zone management, considers transboundary interactions with neighboring states, and provides the strategic basis for the preparation of Maritime Spatial Planning Frameworks at sub-regional, regional, or inter-regional level. In doing so, it serves as the principal mechanism for coordinating sectoral policies and investment programmes that influence the maritime environment, including national energy policy, port development, fisheries management, environmental conservation, island policy, emergency management, and climate adaptation planning, thereby ensuring the sustainable and orderly development of Greece's maritime space.

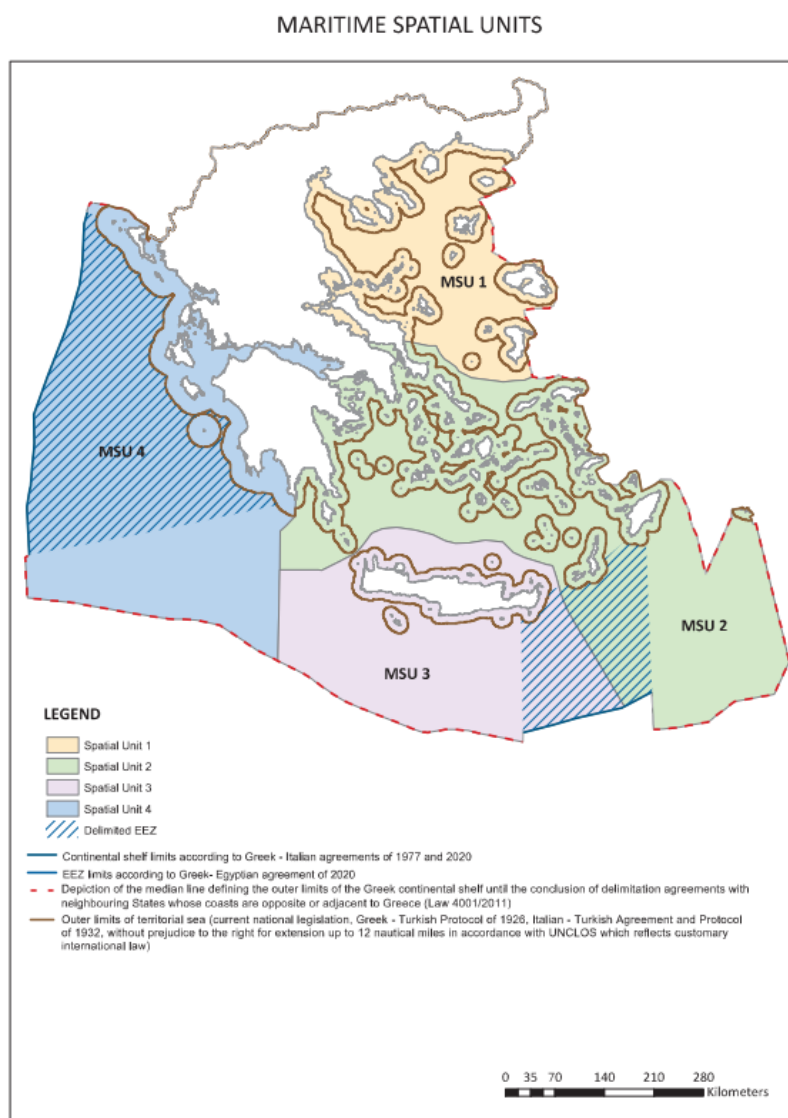
Offshore hydrocarbon exploration and production is recognized by the NMSS as a specific objective for the promotion of maritime development and a potentially important activity contributing to national energy security and energy supply objectives, as reflected in the Revised National Energy and Climate Plan (NECP 2024). However, the Strategy emphasizes that any hydrocarbon-related activities should be planned, developed, and implemented in a manner that minimizes adverse impacts on both the natural environment and human activities, ensuring compatibility with environmental protection objectives and other maritime uses.

### 5.3.3.5 Designation of Maritime Spatial Units (MSUs)

Maritime Spatial Units (MSUs) adopted through Ministerial Decision ΥΠΕΝ/ΔΧΩΠΣ/43090/574/17.04.2025 (GG D 229/2025), are geographically defined marine planning areas established under the NMSS to serve as the spatial basis for the preparation of MSPFs. They are intended to group areas with similar environmental, economic, and planning characteristics, thereby enabling the coordinated management of maritime activities and the sustainable use of marine resources. For the purposes of maritime spatial planning, the Asopos-1 exploration well is located within the Northern Ionian Maritime Spatial Unit (MSU 4), as presented in Figure 5-12 overleaf.

Spatial Unit 4, covers the maritime area of western Greece, including the Adriatic, Ionian Sea, and Central Mediterranean marine regions where Greece exercises sovereign rights and jurisdiction in accordance with national legislation. The unit encompasses the offshore waters adjacent to the Regions of Western Greece, Epirus, and the Ionian Islands, as well as portions of the Peloponnese, Central Greece, and Attica.

The Asopus-1 exploration well, located west of Kerkyra (Corfu) in Block 2, falls within this Maritime Spatial Unit and is therefore subject to the strategic directions and planning objectives applicable to Spatial Unit 4 under the National Maritime Spatial Strategy.



**Figure 5-12: Greece's Maritime Spatial Units (MSUs) as defined within the Act of the Cabinet 6/17.04.2025 approving the National Maritime Spatial Strategy (GG Δ' 227/2025).**

### 5.3.3.6 Maritime Spatial Planning Frameworks

The Technical Specifications for the Maritime Spatial Planning Frameworks (MSPFs), adopted through Ministerial Decision ΥΠΕΝ/ΔΧΩΠΣ/43091/575/17.04.2025 (GG D 228/2025), establish the methodology, content, analytical requirements, and preparation procedures for Maritime Spatial Planning Frameworks

under Law 4546/2018. They provide the technical and procedural guidance required for the preparation of maritime spatial plans within the Maritime Spatial Units defined by the National Maritime Spatial Strategy.

The Technical Specifications define:

- the objectives and principles of maritime spatial planning.
- the structure and content of Maritime Spatial Planning Frameworks.
- the spatial scales at which planning is to be undertaken.
- the data collection and analysis requirements.
- the assessment of existing and future maritime uses and activities.
- the identification of conflicts, synergies, and cumulative pressures among maritime sectors.
- the consideration of land-sea interactions.
- environmental, social, economic, and cultural parameters to be considered.
- stakeholder consultation requirements; and
- the preparation of maps, zoning proposals, and spatial management measures.

The document is intended to ensure a consistent methodology for the preparation of Maritime Spatial Planning Frameworks throughout Greece and to facilitate the coordinated management of activities such as offshore energy development, maritime transport, fisheries, aquaculture, tourism, environmental protection, and cultural heritage.

The well is located within the Northern Ionian Maritime Spatial Unit, for which no dedicated Maritime Spatial Planning Framework has yet been adopted. Consequently, project compatibility should be assessed against the NMSS strategic objectives and the relevant sectoral frameworks.

### 5.3.4 Legislative Framework for Energy Security

#### 5.3.4.1 Treaty on the Functioning of the European Union (TFEU)

Energy security and diversification of supply are established as fundamental objectives of European Union energy policy under *Article 194 of the Treaty on the Functioning of the European Union (TFEU)*<sup>20</sup>, which provides that Union policy shall aim to ensure the functioning of the energy market, security of energy supply within the Union, promote energy efficiency and savings, and the development of new and renewable forms of energy.

The aim of the article is to highlight that *“the need to preserve and improve the environment, Union policy on energy shall aim, in a spirit of solidarity between Member States, to:*

- a) ensure the functioning of the energy market;
- b) ensure security of energy supply in the Union;
- c) promote energy efficiency and energy saving and the development of new renewable forms of

<sup>20</sup> Treaty on the Functioning of the European Union (Consolidated Version) [2016] OJ C202/1, art 194.

energy; and

- d) promote the interconnection of energy networks”

while following the above specifies that “such measures shall not affect a Member State's right to determine the conditions for exploiting its energy resources, its choice between different energy sources and the general structure of its energy supply”.

#### 5.3.4.2 Regulation (EU) 2017/1938

The objectives of energy security and diversification are further operationalised through **Regulation (EU) 2017/1938 concerning measures to safeguard the security of gas supply**. The aforementioned, establishes a legally binding framework requiring Member States to ensure secure gas supply to protected customers, undertake national risk assessments, develop preventive action plans and emergency plans, and apply infrastructure resilience standards<sup>21</sup>.

Annex IV of Regulation (EU) 2017/1938 establishes the N-1 infrastructure standard, requiring Member States to demonstrate that total gas demand can be met even in the event of disruption of the single largest gas infrastructure element. Within this framework, domestic gas production is explicitly included as a system input parameter in the calculation of supply adequacy.

This approach effectively defines energy security as a function of diversified and resilient supply components, including imports, storage, LNG capacity, and indigenous production. In systems characterised by high import dependency, the absence of domestic production capacity represents a structural limitation in resilience modelling.

In this context, exploration activities contribute to the evaluation of potential domestic production and therefore support long-term system-level assessments of supply security, without pre-empting development decisions. The generation of subsurface data through exploration is thus consistent with the objectives of Regulation (EU) 2017/1938 insofar as it enables informed evaluation of future supply diversification options within the N-1 resilience framework.

#### 5.3.4.3 European Energy Security Strategy (2014) & REPowerEU Plan (2022)

EU energy security policy is further supported by the European Energy Security Strategy (2014)<sup>22</sup> and the REPowerEU Plan (2022)<sup>23</sup>, which prioritise diversification of energy sources and routes, reduction of dependency on external suppliers, and strengthening of domestic energy system resilience within the Union.

More specifically the European Energy Security Strategy regarding hydrocarbons, highlights that key priority actions for Member States, should be:

- Exploiting, where this option is chosen, hydrocarbons and clean coal considering the decarbonisation priorities.

<sup>21</sup> Regulation (EU) 2017/1938 of the European Parliament and of the Council of 25 October 2017 concerning measures to safeguard the security of gas supply [2017] OJ L280/1.

<sup>22</sup> European Commission, European Energy Security Strategy COM(2014) 330 final

<sup>23</sup> European Commission, REPowerEU Plan COM(2022) 230 final

- Streamlining national administrative procedures for hydrocarbon projects, including by carrying out Strategic Impact Assessments and setting up one-stop shop for granting permitting procedures, in accordance with the Commission's guidance documents on Streamlining environmental assessment procedures for energy infrastructure and Projects of Common interest and on EIAs for large scale trans-boundary projects 25.
- Assessing the potential of unconventional hydrocarbons taking full account of Recommendation 2014/70/EU, in order to ensure that the highest environmental standards are implemented.
- Supporting demonstration projects for carbon capture and storage, particularly those co-financed by the NER 300 Programme and the European Energy Programme for Recovery, such as the ROAD project.

Moreover, the strategy identifies the Commission as the entity responsible to:

- Launch a European science and technology Network on unconventional hydrocarbon extraction.
- Organise an exchange of information between Member States, the relevant industries and non-governmental organisations promoting environmental protection in order to draw up Best Available Techniques (BAT) reference documents on hydrocarbons exploration and production (BREF);
- Ensure the full implementation and review of the CCS Directive and take a decision on the second round of awards under the NER 300 Programme.

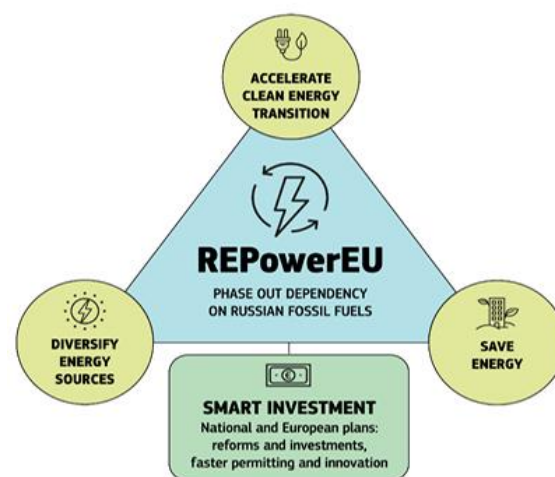


Figure 5-13: Set of actions put forward by REPowerEU<sup>23</sup> Plan

#### 5.3.4.4 Transposition into Greek Law

The above EU legal framework is transposed into Greek legislation primarily through *Law 4001/2011 on the Operation of Energy Markets and Hydrocarbon Regulation*, which establishes the national regulatory framework for the organisation, supervision and security of energy supply systems in Greece<sup>24</sup>. This law incorporates EU energy market principles and provides the legal basis for the regulation of gas infrastructure, system operation, and energy security obligations consistent with EU law.

<sup>24</sup> Law 4001/2011 (Greece) on the Operation of Energy Markets and Hydrocarbon Regulation (GG A' 179/2011)



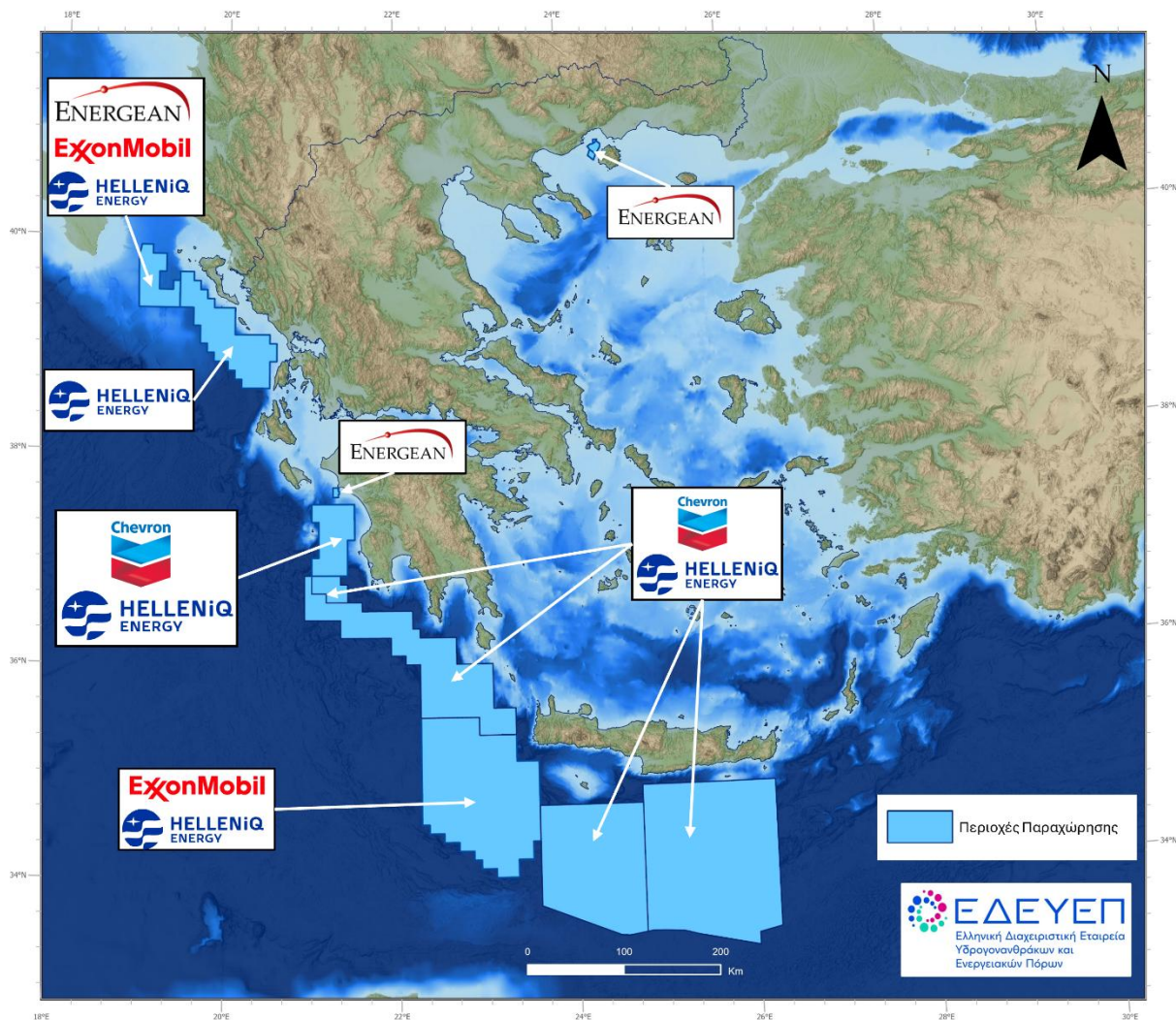
Further implementation is supported through the National Energy and Climate Plan (NECP 2021–2030)<sup>25</sup>, which constitutes the primary strategic planning instrument for energy policy in Greece and operationalises EU energy and climate objectives at national level. The NECP integrates EU requirements on diversification of energy supply, infrastructure resilience, and security of supply planning in accordance with Regulation (EU) 2017/1938.

Greece's NECP identifies energy security of supply as a central policy objective, reflecting the country's continued reliance on imported fossil fuels, particularly natural gas and oil. This structural import dependency exposes the energy system to external market volatility and geopolitical risk, and underpins policy efforts to diversify energy sources, expand renewable energy deployment, and strengthen regional interconnections.

Within this strategic context, offshore hydrocarbon exploration activities such as the Asopus-1 well are considered part of a broader resource assessment and energy diversification agenda (Figure 5-14), aimed at evaluating potential indigenous hydrocarbon resources that could contribute (if commercially viable) to enhancing long-term supply security and reducing import exposure. At the same time, the NECP trajectory clearly prioritises decarbonisation and renewable energy expansion, meaning that any potential contribution from domestic hydrocarbons would be transitional and subject to strict environmental and safety constraints. Accordingly, offshore exploration activities must be assessed within a dual framework: (i) their potential contribution to national energy security objectives through improved resource knowledge and possible future supply diversification, and (ii) their environmental and climate implications, which must be managed consistently with Greece's long-term decarbonisation commitments and EU climate policy objectives.

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<sup>25</sup> Hellenic Republic, National Energy and Climate Plan (NECP) (Ministry of Environment and Energy, 2024)



(Source: HEREMA)

Figure 5-14: Hydrocarbon exploration blocks in Greece.

Finally, throughout the section, it is made clear that Greece's hydrocarbon exploration programme could offer a combination of economic, strategic, and energy-related benefits. It is expected to create employment opportunities and support the development of specialised skills, strengthening the country's human capital. At the same time, potential discoveries could enhance Greece's energy security and diversification, reinforcing its role in the Eastern Mediterranean energy system and contributing to EU supply during the energy transition. The programme is supported by strong institutional oversight from bodies such as the Hellenic Hydrocarbons and Energy Resources Management Company (HEREMA) and the Ministry of Environment and Energy (YPEN), ensuring high standards of environmental protection and safety. Additionally, revenues may support regional development and help mitigate the socio-economic impacts of the transition away from lignite, contributing to a more balanced and sustainable energy transition.

The proposed Project supports the objectives of energy security and diversification through the evaluation of domestic hydrocarbon resources within Block 2. While the Project is limited to exploration activities and does not include hydrocarbon production, successful identification of commercially recoverable resources could, subject to further appraisal, development decisions and regulatory approvals, contribute to future economic benefits for Greece through taxation, royalties and other revenues associated with hydrocarbon production.

In this context, any future revenues could support national economic development objectives, including initiatives related to the energy transition and support for local and regional economies.

## 5.4 Standards of international industry and international financial institutions

### 5.4.1 Good Oilfield Practice (GOP) and Good International Industry Practice (GIIP)

The term "Good Oilfield Practice" is used by certain national oil and gas regulatory authorities to describe the approach expected from operators working in their jurisdictions. Unfortunately, it is not a clearly defined concept, and as such, its meaning can be interpreted in different ways.

A commonly accepted definition of "Good Oilfield Practice" is the following:

*"The practices and procedures used in the oil industry worldwide by prudent and diligent operators under conditions and circumstances related to Hydrocarbon Activities, primarily aiming to ensure:*

- Sustainable viability achieved through resource preservation of oil and natural gas, implying the use of appropriate methods and procedures to maximize hydrocarbon recovery in a technically and economically viable way, with corresponding control of reserve decline and minimization of surface losses,
- Operational safety, involving the use of methods and procedures that promote occupational safety and accident prevention,
- Environmental protection, which requires the adoption of methods and procedures that minimize the impact of Hydrocarbon Activities on the environment."

"Good International Industry Practice (GIIP)" is defined as follows:

*"The exercise of professional skill, diligence, prudence, and foresight that would reasonably be expected from skilled and experienced professionals engaged in the same type of undertaking under the same or similar circumstances globally. Circumstances that skilled and experienced professionals may consider when assessing the range of available pollution prevention and control techniques may include, but are not limited to, varying levels of environmental degradation and assimilative capacity, as well as differing levels of economic and technical feasibility."* The World Bank Group's Health, Safety & Environmental (HSE) Guidelines, established in 2007, are technical reference documents that provide examples of approaches based on Good International Industry Practice. The Equator Principles and the Performance Standards of the International Finance Corporation (IFC) refer to these guidelines when defining acceptable performance levels.

In contrast, there are no strict guidelines or established rules that define how "good oilfield practice" is achieved or how performance against such a standard can be measured. Good Oilfield Practice does not concern the adherence to a specific procedure, but rather the approach an operating company takes in carrying out its duties to the government that granted its license. By definition, adherence to the principles of Good International Industry Practice would constitute Good Oilfield Practice.

It is clearly a concept related to how a facility is designed, the methods of construction, operation, and maintenance, as well as how it is managed overall, and is thus equally applicable at every stage of the asset lifecycle.

Good Oilfield Practice is by definition an evolving concept. It requires operators to monitor successes and failures in the industry and adapt their internal practices accordingly. Regulators wish to avoid failures observed elsewhere in the world while ensuring that new, more effective approaches are implemented as soon as possible. Good Oilfield Practice equally promotes the use of recognized and well-proven Standards at the design stage, internal management/control procedures during project execution, and risk-based inspection systems during operations as a means of managing cost.

Energean is committed to adhering to Good Oilfield Practice throughout its day-to-day activities, whether drilling new wells, installing new facilities, or managing existing facilities. This commitment is demonstrated in the way new and existing projects have been formulated and implemented. Energean's projects have included:

- The hiring of international staff with proven experience in developing similar fields.
- The use of internationally recognized contractors for specialized technical and non-technical tasks.
- The identification of appropriate international and industry standards based on which new facilities will be designed and old ones assessed.
- The design of internal controls that allow project reviews and approvals as they pass through each decision-making stage. The upgrade of the newly acquired rig according to international standards, using OEM (Original Equipment Manufacturer) equipment and personnel.
- The early integration of risk reduction techniques in the design process.
- A desire to maximize the project's positive impact on the Greek economy by adapting the design to local industrial capabilities.

The Asopus-1 exploration drilling Project is directly related and compliant with Good Oilfield Practice (GOP), as it concerns hydrocarbon exploration by means of exploration well drilling from offshore facilities (drillship), operating under world-class standards to ensure complete safety and operational excellence. Both Good Oilfield Practice (GOP) and Good International Industry Practice (GIIP) are reflected in the project design, operational controls, environmental management measures, and decommissioning arrangements described in the ESIA.

The Project demonstrates GOP through the adoption of established offshore drilling practices and well integrity controls, including:

- Use of water-based muds (WBM) only and avoidance of oil-based muds or non-aqueous drilling fluids.
- Installation and operation of a subsea Blowout Preventer (BOP), marine riser system, and closed-loop mud circulation system for deeper hole sections.
- Continuous monitoring of drilling parameters, formation evaluation through logging-while-drilling (LWD) and mudlogging, and implementation of well control procedures.
- Capture and onshore disposal of any hydrocarbon-contaminated cuttings, rather than discharge to sea.
- Application of recognised plug and abandonment (P&A) practices, including installation of verified cement barriers.

- Management of drilling waste, hazardous waste, chemicals, and marine operations in accordance with recognised offshore industry procedures and vessel management systems.
- Emergency preparedness measures, including spill response procedures, well control contingencies, and incident reporting arrangements.

These measures are consistent with normal industry practice for deep-water exploration drilling and are intended to ensure safe and environmentally responsible well construction and abandonment.

The Project also incorporates GIIP by aligning with internationally recognised environmental, health, safety, and operational standards, including:

- Compliance with the Barcelona Convention Offshore Protocol and UNEP/MAP standards governing drilling-fluid and cuttings discharges in the Mediterranean. United Nations Environment Programme Mediterranean Action Plan
- Compliance with MARPOL Annex V (waste management) and MARPOL Annex VI (air emissions), including use of fuel meeting the Mediterranean Sulphur Emission Control Area requirements. International Maritime Organization
- Use of internationally recognised methodologies for emissions estimation, including the EMEP/EEA Air Pollutant Emission Inventory Guidebook.
- Application of environmental baseline surveys, seabed surveys, environmental impact assessment (ESIA), and risk assessment processes consistent with international lender and regulator expectations.
- Adoption of waste hierarchy principles through segregation, recycling, recovery, and transfer of wastes to licensed shore facilities.
- Preference for low-toxicity, low-bioaccumulation chemicals and implementation of chemical management procedures.
- Use of a structured HSE management framework, operational procedures, training, maintenance programmes, and contractor controls.
- Post-drilling seabed clearance surveys and removal of temporary offshore infrastructure.
- Consideration of emissions, waste, discharges, biodiversity, and marine environmental impacts throughout the project lifecycle.

The development and implementation of GOP for the Project will be guided by recognized international standards, including relevant publications of the International Association of Oil & Gas Producers (IOGP), the American Petroleum Institute (API), and the International Organization for Standardization (ISO). In particular, reference is made to [IOGP Report 485. Standards and Guidelines for Well Integrity and Well Control](#), which provides a consolidated framework of internationally accepted standards and recommended practices relating to well design, well integrity, barrier management, blowout prevention, well control operations, and competency assurance. The main elements of GOP are summarized in Table 5-11

**Table 5-11: Application of GOP in the Asopus-1 Project**

| GOP AREA                  | RELEVANT STANDARDS                                 | APPLICATION TO ASOPUS-1                                                                                                                                        |
|---------------------------|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Well design and integrity | IOGP Report 485 – Well Control Incident Prevention | Casing, cementing, and barrier systems are designed according to the Energean WMS and relevant international standards. An independent review through the Well |



| GOP AREA                             | RELEVANT STANDARDS                                                                                                                                                                                                                                                                                                                                                 | APPLICATION TO ASOPUS-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                      | <p>API RP 96 – Deepwater Well Design and Construction</p> <p>API RP 65-2 – Isolating Potential Flow Zones During Well Construction</p> <p>ISO 16530-1 – Well Integrity Lifecycle Governance</p> <p>NORSOK D-010 – Well Integrity in Drilling and Well Operations</p>                                                                                               | <p>Examination Scheme supports effective containment of formation fluids and prevention of uncontrolled releases.</p> <p>The Asopus-1 well has been designed using a barrier-based well integrity philosophy with multiple casing strings, cemented intervals, pressure-tested barriers and verification procedures consistent with recognised deepwater drilling practice (Section 6.6).</p> <p>The project includes real-time monitoring of drilling parameters, kick detection systems, managed pressure drilling (MPD) capability where required (Section 6.4.1.3), and well abandonment using verified cement barriers (Section 6.6.2). The well will be drilled and abandoned in accordance with the HEREMA-approved Notification of Well Operations (NoWO), with an ROV post-abandonment seabed clearance survey before the rig release.</p>                                                                                                                                              |
| <b>Well control</b>                  | <p>IOGP Report 485 – Well Control Incident Prevention</p> <p>API Standard 53 – Blowout Prevention. Equipment Systems for Drilling Wells</p> <p>API RP 59 – Well Control Operations</p> <p>API Spec 16A – Drill-through Equipment Specifications</p> <p>API Spec 16C – Choke and Kill Equipment</p> <p>API Spec 16D – Control systems for drilling well control</p> | <p>Well control measures for Asopus-1 include a subsea BOP system installed on the wellhead, choke and kill systems, mud gas separator, emergency disconnect capability, acoustic/ROV intervention capability, and continuous monitoring of pressure, returns and mud properties (Section 6.4.1.5).</p> <p>The Stena DrillMAX drillship will operate under certified well-control procedures with trained drilling personnel, routine BOP testing and preventative maintenance in accordance with drilling contractor management systems and recognised offshore drilling standards.</p> <p>Blowout preventer systems and related equipment are certified, tested, and operated in line with applicable standards, company procedures, and project well control interface arrangements.</p> <p>An independent shut-in device may also be installed between the subsea BOP and the wellhead. This device is able to shear and seal instantly in the unlikely event of a loss of well control.</p> |
| <b>Drilling fluid management</b>     | <p>API Specification 13A – Drilling Fluids Materials</p> <p>API RP 13B-1 – Field Testing Water-based Drilling Fluids</p> <p>NORSOK D-010 – Well Integrity in Drilling and Well Operations</p>                                                                                                                                                                      | <p>The project will use seawater and water-based muds (WBMs) only, with no planned use of oil-based muds (OBMs) or non-aqueous drilling fluids (Section 6.7.1.1).</p> <p>Riserless sections will discharge seawater, gel sweeps and associated cuttings at seabed, while deeper riser sections will utilise a closed-loop mud circulation system with shale shakers and centrifuges for solids control, mud conditioning and reuse. Mud properties will be continuously monitored to maintain drilling stability and minimise waste generation, while any hydrocarbon-contaminated cuttings will be contained onboard and returned to shore for treatment and disposal (Section 6.9.1.1).</p>                                                                                                                                                                                                                                                                                                    |
| <b>Cuttings and waste management</b> | <p>MARPOL Annex V – Prevention of Pollution by Garbage from Ships</p> <p>IOGP Report 602 – Environmental effects and regulation of offshore drill cuttings discharges</p> <p>IOGP Info Sheet “Use of Lifecycle Impact Assessments in drill cuttings waste management decisions”</p> <p>EU Waste Framework Directive 2008/98/EC</p>                                 | <p>Drill cuttings generated during WBM drilling will be discharged in accordance with the project discharge assessment and Mediterranean offshore drilling practice, while contaminated cuttings will be segregated and transported to licensed shore facilities (Section 6.9.1.1).</p> <p>Waste streams including municipal waste, scrap metal, oily rags, sludge, chemicals, plastics and hazardous wastes will be segregated onboard the MODU and support vessels, recorded where required, and transferred to authorised waste contractors at the Port of Igoumenitsa (Sections 6.9.1.2, 6.9.1.3, 6.9.1.4).</p> <p>Waste minimisation, reuse and recycling principles are incorporated into project logistics and waste management procedures.</p>                                                                                                                                                                                                                                           |

| GOP AREA                    | RELEVANT STANDARDS                                                                                                                                                                                                                                                                                                                                                                                                                                                             | APPLICATION TO ASOPUS-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                             | OSPAR-equivalent Offshore Chemical and Waste Management Principles                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Chemicals management</b> | REACH Regulation (EC 1907/2006) – Registration, Evaluation, Authorisation and Restriction of Chemicals<br>OSPAR Decision 2000/2 on a Harmonised Mandatory Control System (HMCS) for the Use and Reduction of the Discharge of Offshore Chemicals<br>OSPAR Recommendation 2000/4 on a Harmonised Offshore Chemical Notification Format (HOCNF)<br>MARPOL Annex III – Prevention of Pollution by Harmful Substances Carried by Sea in Packaged Form                              | <p>Chemicals are limited to those required for drilling, cementing, and associated operational activities, selected under the operator's chemical management procedures with preference for lower-toxicity products where practicable (Section 6.7.1.1).</p> <p>Chemicals will be stored in designated contained areas onboard the MODU and shore base, with bunding, spill kits, transfer procedures, inventory tracking and trained personnel in place (Section 6.7.1.2).</p> <p>Hazardous materials and chemical residues will be segregated and returned to shore for appropriate treatment or disposal, while transfer operations will be conducted using certified vessels and controlled lifting and pumping procedures (Sections 6.7.1.2, 6.8.1).</p> |
| <b>Pollution prevention</b> | MARPOL Annex I – Regulations for the Prevention of Pollution by Oil<br>MARPOL Annex IV – Regulations for the Prevention of Pollution by Sewage from Ships<br>MARPOL Annex V – Regulations for the Prevention of Pollution by Garbage from Ships<br>MARPOL Annex VI – Regulations for the Prevention of Air Pollution from Ships<br>IMO OPRC 1990 – International Convention on Oil Pollution Preparedness, Response and Co-operation<br>Barcelona Convention Offshore Protocol | <p>Pollution prevention measures for Asopus-1 include secondary containment for fuels and chemicals, designated waste storage areas, controlled drainage arrangements, spill kits, vessel SOPEPs, emergency response procedures and contractor HSE management systems (Section 6.6.7).</p> <p>The MODU and support vessels will comply with MARPOL requirements, including the Mediterranean SOx Emission Control Area (SECA) sulphur limit of 0.10% m/m fuel sulphur content (Section 6.7.3.1).</p> <p>Emergency spill response arrangements, reporting procedures and contingency planning are integrated into offshore and shore base operations (Section 6.6.7).</p>                                                                                      |
| <b>Marine operations</b>    | IOGP Guidelines for Offshore Marine Operations<br>IMO SOLAS Convention – Safety of Life at Sea<br>IMO COLREGs Convention on the International Regulations for Preventing Collisions at Sea<br>IMCA M 103 - Guidelines for the design and operation of dynamically positioned vessels                                                                                                                                                                                           | <p>The drillship and associated marine systems operate in compliance with applicable classification, maritime, and flag-state requirements. Stena DrillMAX will operate as a DP3 dynamically positioned drillship without anchoring, reducing seabed disturbance and avoiding anchor-related impacts (Section 6.4.1.1).</p> <p>Marine operations will include exclusion zones, SIMOPS controls (not anticipated for the Project), certified lifting equipment, navigational controls, vessel management procedures and coordination with support vessels and helicopter logistics (Sections 6.5.3, 6.4.2, 6.4.3).</p> <p>Acoustic positioning transponders and temporary subsea equipment deployed during drilling will be recovered at the</p>               |



| GOP AREA                                              | RELEVANT STANDARDS                                                                                                                                                                                                                                                                                                                                                                                                                                            | APPLICATION TO ASOPUS-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                               | end of operations, followed by ROV seabed clearance survey before the rig release (Section 6.14.2).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Facilities/equipment integrity and maintenance</b> | DNV Class Requirements<br>Flag-state Requirements                                                                                                                                                                                                                                                                                                                                                                                                             | <p>Safety-critical systems onboard the MODU, including BOP equipment, marine riser systems, pressure control equipment, generators and DP systems, will be maintained under planned inspection, testing and preventative maintenance programmes in line with the Report of Major Hazards.</p> <p>The Stena DrillMAX's six Wärtsilä diesel engines are certified to IMO Tier I standards and subject to statutory inspection and maintenance requirements. Operational controls include equipment certification, management of change procedures, maintenance records and verification of barrier integrity throughout drilling operations (Section 6.10).</p>                                           |
| <b>Health and safety management</b>                   | ISO 45001 – Occupational Health and Safety Management Systems<br>IOGP Report 459 - Life-Saving Rules<br>IOGP Report 456 – Process safety – recommended practice on key performance indicators                                                                                                                                                                                                                                                                 | <p>The project will be implemented under a bridging agreement between the operator and drilling contractor. This includes an agreed approach for the HSE Management Systems, incorporating risk assessments, permit-to-work systems, competency assurance, contractor management and incident reporting procedures.</p> <p>Emergency preparedness measures include medical response capability, evacuation procedures, helicopter safety protocols, search and rescue coordination and routine drills/exercises onboard the MODU and support vessels.</p> <p>Personnel involved in well control, lifting operations and chemical handling will be trained and certified as required (Section 12.1).</p> |
| <b>Emergency preparedness</b>                         | IMO OPRC 1990 – International Convention on Oil Pollution Preparedness, Response and Co-operation<br>IOGP Report 594 – Source Control Emergency Response Planning Guide for Subsea Wells<br>IOGP Report 519 - Contingency planning for oil spills on water<br>MARPOL 73/78, Annex I – Regulation 37: Shipboard oil pollution emergency plan<br>IMO Resolution MEPC.54(32) – Guidelines for the Development of Shipboard Oil Pollution Emergency Plans (SOPEP) | <p>Emergency preparedness measures include vessel SOPEP, contingency arrangements for well control, emergency shutdown procedures, evacuation plans, firefighting systems, oil spill response resources and coordination with national authorities where required.</p> <p>The MODU is equipped with emergency generators, lifeboats, firefighting systems and emergency communications systems. Spill response equipment, incident reporting and corrective action procedures will be maintained throughout offshore and shore base activities (Section 6.6.7).</p>                                                                                                                                     |
| <b>Decommissioning and abandonment</b>                | NORSOK D-010 – Well Integrity in Drilling and Well Operations<br>ISO 16530-1 – Well Integrity Lifecycle Governance<br>IOGP Report 585 - Overview of International Offshore Decommissioning Regulations – Volume 2: Wells Plugging & Abandonment                                                                                                                                                                                                               | <p>Upon completion of drilling and formation evaluation, the well will be plugged and abandoned. Cement plugs will be installed to establish permanent barriers, verified through pressure testing and tagging.</p> <p>The wellhead will be left in place in line with deepwater practices and limited impact to other marine users. All temporary subsea equipment will be recovered, and an ROV survey will confirm seabed clearance before the rig release. Onshore, the temporary logistics base will be fully demobilised with no permanent infrastructure remaining (Section 6.14).</p>                                                                                                           |

| GOP AREA | RELEVANT STANDARDS                              | APPLICATION TO ASOPUS-1 |
|----------|-------------------------------------------------|-------------------------|
|          | API RP 65-3 – Wellbore Plugging and Abandonment |                         |

## 5.4.2 Best Available Techniques (BAT)

### 5.4.2.1 Overview of Best Risk Management Approaches (BRMA) and Best Available Techniques (BAT)

The concept of Best Available Techniques (BAT), as incorporated within the broader European environmental legislation, is further elaborated and operationalized in the offshore industry through the European Commission's *"Best Available Techniques Guidance Document on Upstream Hydrocarbon Exploration and Production" (2019)*, which constitutes the most recent comprehensive European reference document concerning environmental protection practices applicable to offshore hydrocarbon activities. The Guidance Document was developed following a multi-year technical information exchange process involving EU Member States, regulatory authorities, industry representatives, and environmental stakeholders, with the objective of identifying and consolidating the most effective environmental management techniques and risk mitigation measures applicable to both onshore and offshore hydrocarbon exploration and production operations.

With regard to offshore exploration drilling activities, the BAT Guidance Document identifies a range of environmental aspects requiring the implementation of BAT, including the handling and management of drilling muds and drill cuttings, offshore chemical management, prevention of accidental spills and releases, control of atmospheric emissions, minimization of offshore discharges, energy efficiency, waste management, environmental monitoring, and risk-based operational planning. The Guidance Document emphasizes that offshore drilling activities should be designed and conducted through the application of integrated environmental management systems and operational controls intended to minimize risks to the marine environment throughout the entire lifecycle of the activity.

In particular, the BAT Guidance Document highlights the importance of implementing environmentally optimized drilling fluid systems, reducing the discharge of hazardous substances, applying robust well integrity and blowout prevention measures, ensuring proper containment and handling of chemicals, minimizing fugitive emissions, and establishing comprehensive monitoring and emergency response procedures.

More specifically, for upstream exploration and production of offshore hydrocarbons, Part Four of the guidance entails the following activities:

- 1) Handling of Drill Cuttings and Drilling Muds
- 2) Handling & Storage of Hydrocarbons
- 3) Handling and Storage of Chemicals
- 4) Energy Efficiency
- 5) Flaring and Venting

- 6) Management of Fugitive Emissions
- 7) Produced Water Handling and Management
- 8) Management of Drain Water
- 9) Facility Decommissioning
- 10) Environmental Monitoring.

Activities 5 (Flaring and Venting) and 7 (Produced Water Handling and Management) are not relevant to the Project, as these activities are not included in the exploration well operations.

For each activity, the document identifies either Best Available Techniques (BAT) and/or Best Risk Management Approaches (BRMA).

Table 5-12 provides a summary of proposed BATs and BRMAs associated with the Project.

**Table 5-12: Offshore activities covered within the Best Available Techniques Guidance Document on upstream hydrocarbon exploration and production**

| OFFSHORE ACTIVITY                             | BEST RISK MANAGEMENT APPROACHES (BRMA) /<br>BEST AVAILABLE TECHNIQUES (BAT)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Handling of Drill Cuttings & Drilling Muds | <p>BRMAs</p> <ul style="list-style-type: none"> <li>• HSE Management System, including HSE documentation.</li> <li>• engineering design for safe handling of drill cuttings/muds</li> <li>• environmental baseline survey.</li> <li>• EIA/ENVID assessment, including: <ul style="list-style-type: none"> <li>– estimate discharges</li> <li>– assess mud properties and environmental risks</li> <li>– monitor substitution chemicals.</li> </ul> </li> <li>• Specialist studies (well design, cuttings modelling, treatment systems, monitoring).</li> <li>• Minimise OBM use, management of cuttings containing OBM.</li> <li>• Avoid discharge in sensitive areas.</li> <li>• Sampling and monitoring cuttings discharges while drilling through a hydrocarbon-bearing reservoir.</li> </ul> <p>BATs</p> <ul style="list-style-type: none"> <li>• Offshore mud reuse.</li> <li>• Offshore cuttings reinjection in locations in which suitable disposal wells are available.</li> <li>• Onshore treatment/disposal/reuse (thermal desorption, biological treatment, beneficial reuse, landfill/incineration as last resort).</li> <li>• Offshore discharge of cuttings not containing hydrocarbons.</li> </ul> |
| 2. Handling & Storage of Hydrocarbons         | <p>BRMAs</p> <ul style="list-style-type: none"> <li>• HSE Management System, including HSE documentation.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

| OFFSHORE<br>ACTIVITY               | BEST RISK MANAGEMENT APPROACHES (BRMA) /<br>BEST AVAILABLE TECHNIQUES (BAT)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                    | <ul style="list-style-type: none"> <li>• Inherently safe design.</li> <li>• EIA/ENVID assessment.</li> <li>• Spill Contingency Plan.</li> <li>• During well drilling and completion               <ul style="list-style-type: none"> <li>– blowout prevention</li> <li>– well testing safety.</li> </ul> </li> <li>• During production and offloading (<i>not applicable</i>)               <ul style="list-style-type: none"> <li>– emergency shutdown systems</li> <li>– integrity monitoring.</li> </ul> </li> <li>• Incident recording and corrective actions.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 3. Handling & Storage of Chemicals | <p>BRMAs</p> <ul style="list-style-type: none"> <li>• HSE Management System;</li> <li>• Regulatory review to identify and comply with applicable chemical regulations, including:               <ul style="list-style-type: none"> <li>– REACH registration requirements and downstream user obligations.</li> <li>– Risk management measures and operational conditions specified in REACH registrations, eSDSs, and exposure scenarios.</li> <li>– Authorisation requirements for Substances of Very High Concern (SVHCs) and other REACH restrictions.</li> <li>– EU Biocides Regulation (EU BPR) authorisation and usage requirements for biocidal products.</li> </ul> </li> <li>• Apply the OSPAR Harmonised Mandatory Control System (HMCS) (or equivalent) to manage offshore chemical use and discharge by:               <ul style="list-style-type: none"> <li>– Providing regulators with chemical composition, environmental property, usage, and discharge information.</li> <li>– Preparing HOCNF submissions and supporting toxicity testing where required.</li> <li>– Conducting pre-screening (prefer PLONOR-listed substances, identify substances requiring substitution due to high toxicity, bioaccumulation potential, and low degradability).</li> <li>– Performing environmental risk assessments using appropriate models and parameters.</li> <li>– Using validated dilution and dispersion models operated by trained personnel.</li> <li>– Ensuring environmental exposure remains below acceptable levels outside designated mixing zones.</li> <li>– Implementing risk reduction measures where predicted exposure approaches or exceeds acceptable thresholds.</li> </ul> </li> <li>• Ensure engineering design incorporates inherent safety principles and minimises environmental impacts from planned or unplanned releases.</li> <li>• Maintain HSE documentation, including hazards and controls, technical management, operational safeguards, and chemical spill contingency plan.</li> <li>• Additional measures to reduce risks of chemical releases to ALARP or equivalent levels.</li> <li>• Chemical Transfer Controls               <ul style="list-style-type: none"> <li>– Lifting, pumping, and transfer procedures supported by risk assessments.</li> </ul> </li> </ul> |

| OFFSHORE<br>ACTIVITY | BEST RISK MANAGEMENT APPROACHES (BRMA) /<br>BEST AVAILABLE TECHNIQUES (BAT)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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|                      | <ul style="list-style-type: none"> <li>– Competent and trained Personnel involved in chemical transfer, handling, and storage.</li> <li>– Certified supply vessels for chemical transportation and storage.</li> <li>• Chemical Storage and Handling Controls               <ul style="list-style-type: none"> <li>– Conduct containment risk assessments to determine primary, secondary, and tertiary containment requirements.</li> <li>– Store chemicals and chemical waste in separate, clearly labelled containers or drums.</li> </ul> </li> <li>• Monitor and record chemical usage to enable accurate reporting of any unintended releases.</li> <li>• Design Measures               <ul style="list-style-type: none"> <li>– Install non-return valves at chemical injection points.</li> <li>– Match chemical injection pump design pressure to the receiving system pressure.</li> <li>– Bunded storage areas with adequate drainage and segregation of incompatible chemicals.</li> <li>– Secure transportable tank containers within bunded areas.</li> <li>– Design adequate on-site chemical storage capacity.</li> <li>– Establish containment barriers for potential leaks, incidents, and accidents.</li> <li>– Ensure transfer piping is self-draining.</li> <li>– Protect piping, hose couplings, and critical equipment from mechanical damage and dropped objects.</li> <li>– Consider dedicated drainage systems to chemical spill tanks.</li> <li>– Insulated bunds in cryogenic liquid systems.</li> <li>– Design systems to minimise spill risks and facilitate spill collection.</li> <li>– Use closed transfer systems capable of complete drainage.</li> <li>– Install unique transfer couplings to prevent accidental connection to incorrect tanks.</li> </ul> </li> <li>• Operational Measures               <ul style="list-style-type: none"> <li>– Prioritise returning unused chemicals to shore; only discharge to sea in exceptional permitted circumstances.</li> <li>– Maintain live inventory of chemical quantities, trade names, hazardous components, toxicity information.</li> <li>– Routinely inspect, maintain, test, and exercise spill response and containment equipment.</li> <li>– Minimise and continuously monitor discharges of hydraulic fluids and other subsea operational chemicals.</li> <li>– Record and report all spills and near misses.</li> <li>– Conduct root-cause investigations for significant environmental incidents and implement corrective actions.</li> <li>– Maintain transfer equipment and storage facilities in accordance with manufacturer and regulatory requirements.</li> <li>– Retain maintenance records.</li> <li>– Regularly inspect storage and transfer systems for structural defects, leaks, and security vulnerabilities.</li> </ul> </li> </ul> |
| 4. Energy Efficiency | BRMAs <ul style="list-style-type: none"> <li>• HSE Management System;</li> <li>• Integrate energy efficiency requirements into the earliest stages of approval and planning.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

| OFFSHORE<br>ACTIVITY                | BEST RISK MANAGEMENT APPROACHES (BRMA) /<br>BEST AVAILABLE TECHNIQUES (BAT)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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|                                     | <ul style="list-style-type: none"> <li>• Address energy management within environmental risk assessments (e.g., EIA or ENVID).</li> <li>• Implement an Energy Efficiency Management System (EEMS) covering the entire lifecycle of field operations, including: <ul style="list-style-type: none"> <li>– Energy efficiency policy with senior management commitment.</li> <li>– Establishing a framework with objectives, targets, strategies, and supporting operational procedures.</li> <li>– Risk assessments to evaluate health, safety, security, societal, and environmental implications of energy consumption and identify acceptable trade-offs.</li> <li>– Forecasting energy consumption throughout the project lifecycle.</li> <li>– Benchmarking energy performance indicators.</li> <li>– Monitoring and reviewing performance (energy metering, monitoring, energy consumption baselines).</li> <li>– Comparison against manufacturer performance specifications.</li> <li>– Analysis of energy use and identification of cost-effective efficiency improvements.</li> <li>– Maintenance of energy-intensive equipment (e.g. compressors, pumps).</li> <li>– Periodic energy audits.</li> <li>– Regular senior management reviews to ensure ongoing effectiveness and suitability of the system.</li> <li>– Engineering design incorporating energy efficiency principles, including design practices that optimise the facility and minimise overall energy consumption.</li> </ul> </li> </ul> <p>BATs</p> <ul style="list-style-type: none"> <li>• Energy Efficiency Studies during concept development and option selection stages. <ul style="list-style-type: none"> <li>– Quantify and evaluate impacts, energy use and losses.</li> <li>– Optimise process parameters and select equipment.</li> </ul> </li> <li>• Energy Monitoring (sensors, control systems, data management, analytical software) to collect and analyse energy performance data, identify trends, deviations, and improvement opportunities.</li> <li>• Reservoir Management (<i>not applicable</i>)</li> <li>• Active Well Control and Monitoring (<i>not applicable</i>)</li> <li>• Process Systems (<i>not applicable</i>)</li> <li>• Water Injection Systems (<i>not applicable</i>)</li> <li>• Utilities and Auxiliary Systems <ul style="list-style-type: none"> <li>– Review and optimise cooling system performance according to facility requirements.</li> <li>– Utilise heat exchangers to recover and reuse surplus heating or cooling energy.</li> <li>– Implement energy-efficient lighting measures (LED lighting, optimised lighting layouts, maximised use of natural lighting, efficient fixtures and lighting equipment).</li> </ul> </li> </ul> |
| 6. Management of Fugitive Emissions | <p>BRMAs</p> <ul style="list-style-type: none"> <li>• HSE Management System, including HSE documentation.</li> <li>• Emissions Management Plan covering greenhouse gas (GHG) emissions.</li> <li>• Inventory of actual and potential fugitive emission sources, including: <ul style="list-style-type: none"> <li>– Identification of all emission points.</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |



| OFFSHORE<br>ACTIVITY      | BEST RISK MANAGEMENT APPROACHES (BRMA) /<br>BEST AVAILABLE TECHNIQUES (BAT)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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|                           | <ul style="list-style-type: none"> <li>– Estimation of emissions using consistent and repeatable methodologies.</li> <li>– Use of equipment inventories, and source-specific emission factors.</li> </ul> <ul style="list-style-type: none"> <li>• Address fugitive emissions within environmental risk assessments (e.g., EIA), linked where appropriate to the Emissions Management Plan.</li> <li>• Ensure engineering design incorporates safety principles and measures to minimise fugitive emissions.</li> <li>• Implement a Leak Detection and Repair (LDAR) Programme, including: <ul style="list-style-type: none"> <li>– Routine leak screening and direct measurement techniques.</li> <li>– Periodic facility inspections using appropriate detection technologies.</li> <li>– Flange management programmes.</li> <li>– Maintenance of an up-to-date equipment register to track leaks and repairs.</li> </ul> </li> </ul> <p>BATs</p> <p><u>Design measures</u></p> <ul style="list-style-type: none"> <li>• Minimise the number of potential leak sources (flanges, threaded connections), maximise process containment.</li> <li>• High-integrity components (valves, seals, packings, flanges, and gaskets).</li> <li>• Welded piping systems for hydrocarbon service.</li> <li>• Double-packed valves and zero-bleed pneumatic controllers.</li> <li>• Magnetically driven equipment and mechanical seals instead of packed seals where practicable.</li> <li>• Compressor seal technology (preferably lower-emission dry seals where suitable).</li> <li>• Design facilities to allow easy access for inspection and maintenance of potential leak points.</li> <li>• Install fixed fire and gas detection systems to identify significant releases.</li> </ul> <p><u>Operational measures</u></p> <ul style="list-style-type: none"> <li>• Leak Detection and Repair (LDAR) programme.</li> <li>• Conduct routine leak inspections using handheld gas detection instruments (sniffing method).</li> <li>• Use Optical Gas Imaging (OGI) cameras to detect and visualise gas leaks, particularly in inaccessible areas.</li> <li>• Ensure maintenance activities involving flanged joints include leak testing and verification procedures.</li> <li>• Maintain trained and competent personnel for leak detection and monitoring activities.</li> <li>• Track, record, and repair identified leaks through an up-to-date equipment register.</li> <li>• Monitor developments in advanced methane detection technologies (e.g., SOF and DIAL) for future facility-wide emissions quantification.</li> </ul> |
| 8. Drain Water Management | <p>BRMAs</p> <ul style="list-style-type: none"> <li>• HSE Management System, including HSE documentation.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

| OFFSHORE<br>ACTIVITY | BEST RISK MANAGEMENT APPROACHES (BRMA) /<br>BEST AVAILABLE TECHNIQUES (BAT)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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|                      | <ul style="list-style-type: none"> <li>• Use safe engineering design to minimise releases and environmental impact.</li> <li>• Planned discharges from drainage are addressed as part of management measures detailed in an environmental risk assessment such as an EIA/ENVID</li> <li>• Spill contingency plan for drainage-related incidents.</li> </ul> <p>BATs</p> <p><u>Design measures</u></p> <ul style="list-style-type: none"> <li>• Design drain systems to operate safely within the facility's environmental, safety, and integrity limits.</li> <li>• Segregate closed and open drain systems, hazardous and non-hazardous drainage streams.</li> <li>• Prevent hydrocarbon/chemical spillages overboard and outside designated areas.</li> <li>• Locate drain and slops tanks to optimise drainage and fluid flow.</li> <li>• Provide adequate drain points to enable controlled draining of process and utility systems.</li> <li>• Prevent accumulation of hazardous liquids on facility deck areas.</li> <li>• Appropriately sized drain piping to accommodate solids and facilitate cleaning.</li> <li>• Containment measures (drip trays, coamings, bunds) beneath equipment and areas with spill potential, including process equipment, tanks, maintenance areas etc.</li> <li>• Prevent migration via the drain system of fluids, gases (and fires) between facility areas.</li> <li>• Enable recovery of hydrocarbons from drain fluids and safe disposal of treated water.</li> <li>• Provide accessible sampling points to monitor and record discharge water quality.</li> </ul> <p><u>Operational measures</u></p> <ul style="list-style-type: none"> <li>• Assess operational changes that may affect drain system performance and conduct risk assessments where required.</li> <li>• Maintain a controlled chemical inventory and minimise chemical quantities and varieties to operational needs.</li> <li>• During maintenance and other activities, avoid discharges of chemicals to the drain system where practicable, collecting these in dedicated containers for transport to shore.</li> <li>• Inspection, repair and maintenance of drain system integrity (i.e. leak prevention) covered by a Planned Maintenance System.</li> <li>• Provide storage and transport arrangements for contaminated or off-spec drain tank contents (where justified by risk assessment).</li> <li>• Verify compatibility of fluids entering the drain system to prevent chemical reactions or solidification.</li> </ul> |

| OFFSHORE<br>ACTIVITY         | BEST RISK MANAGEMENT APPROACHES (BRMA) /<br>BEST AVAILABLE TECHNIQUES (BAT)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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|                              | <ul style="list-style-type: none"> <li>• Train personnel on drain system types, functions, and correct operation.</li> <li>• Monitor and, where practicable, quantify chemicals in discharge streams. Where discharge monitoring is limited, implement strict internal controls and minimise contaminant inputs.</li> <li>• Use automatic flow diversion systems to route contaminated runoff to drain treatment systems before any overboard discharge.</li> <li>• Remove chemical spills using spill kits and dispose of waste appropriately rather than washing spills into the drain system.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 9. Facility Decommissioning  | <p>BRMAs</p> <p>Maintain an HSE Management System covering decommissioning from design through to end of life.</p> <p>Conduct a Comparative Assessment of decommissioning options (safety, environmental impact, feasibility, cost, stakeholders) to select the best approach.</p> <p>Develop an approved Decommissioning Plan agreed with regulators covering wells, facilities, and pipelines.</p> <p>Include decommissioning within environmental risk assessments (EIA/ENVID), addressing offshore removal activities and impacts, onshore reuse, recycling, and disposal, stakeholders' considerations.</p> <p>Consider decommissioning options during engineering design and execution planning, including:</p> <ul style="list-style-type: none"> <li>– Well plugging and abandonment</li> <li>– Facility decommissioning operations</li> <li>– Drill cuttings management</li> <li>– Management of facility infrastructure returned to shore.</li> </ul> <p>Ensure robust HSE documentation to justify controls and manage environmental and safety risks.</p> <p>Implement post-decommissioning monitoring and aftercare to verify environmental performance.</p>                                                                                                                                                                                                                                                                                                          |
| 10. Environmental Monitoring | <p>BRMAs</p> <p>Implement an HSE Management System with defined procedures for environmental monitoring. Include environmental monitoring within EIA/ENVID risk assessments.</p> <p>Develop a risk-based Environmental Monitoring Programme covering all phases:</p> <ul style="list-style-type: none"> <li>– Baseline monitoring during early development</li> <li>– Monitoring during design and EIA development</li> <li>– Routine monitoring during production</li> <li>– Pre- and post-decommissioning monitoring.</li> </ul> <p>Define monitoring based on risk and site-specific conditions, including:</p> <ul style="list-style-type: none"> <li>– Type and scale of installation, complexity of processes and emission sources</li> <li>– Environmental sensitivity of receptors</li> <li>– Potential health and environmental impacts</li> <li>– Natural and operational hazards</li> <li>– Historical performance of the facility.</li> </ul> <p>Key considerations for monitoring emissions and discharges:</p> <ul style="list-style-type: none"> <li>– Use standard CEN/ISO measurement methods.</li> <li>– For air emissions, record operational data (fuel flow, stack velocity etc).</li> <li>– Identify and prioritise major emission / discharge sources for routine monitoring and minor sources for reduced-frequency monitoring or portable/spot checks.</li> <li>– Characterise emissions across representative operating conditions, including</li> </ul> |

| OFFSHORE<br>ACTIVITY | BEST RISK MANAGEMENT APPROACHES (BRMA) /<br>BEST AVAILABLE TECHNIQUES (BAT)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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|                      | <p>different fuels (e.g. gas and diesel).</p> <ul style="list-style-type: none"> <li>– Account for measurement uncertainty when interpreting and reporting monitoring data.</li> </ul> <p>Key considerations for monitoring environmental impacts (i.e. on receiving environment):</p> <ul style="list-style-type: none"> <li>– Monitoring data is representative over time for the processes and activities being assessed.</li> <li>– Sensitivity of receiving environment.</li> <li>– Select monitoring locations using scientific methods and modelling</li> <li>– Compare results with baseline environmental data</li> <li>– Assess site conditions at regular intervals</li> <li>– Evaluate environmental impacts and effectiveness of mitigation measures</li> <li>– Use recognised national/international standards (e.g. CEN/ISO, OSPAR) for sampling and analysis.</li> <li>– Sampling (or supervision) by appropriately experienced personnel.</li> <li>– QA/QC procedures, including documented quality control systems, suitable detection limits, QA/QC information in monitoring reports where appropriate.</li> </ul> <p>Include monitoring equipment and procedures for emissions and discharges in engineering design.</p> <p>Maintain strong HSE documentation to justify monitoring approaches and support environmental risk control.</p> <p>BATs</p> <p><u>Design measures</u></p> <p>Install sampling ports on combustion equipment (e.g. turbines, generators) to enable monitoring of CO, SO<sub>x</sub>, and NO<sub>x</sub> using portable instruments.</p> <p>Estimate fugitive emissions during design using standard emission factors, then update with site-specific data during operation.</p> <p>Install oil-in-water (OIW) analysers and sampling points, and flow meters on drainage discharge lines.</p> <p><u>Operational measures</u></p> <p>Monitor flare emissions (not applicable).</p> <p>Monitor air emissions (e.g. H<sub>2</sub>S, NO<sub>x</sub>, SO<sub>2</sub>, VOCs, CO, CO<sub>2</sub>, CH<sub>4</sub>) from combustion sources, fugitive emissions.</p> <p>Monitor fuel usage (diesel and fuel gas) and report associated emissions.</p> <p>Monitor discharges using OIW analyzers and sampling systems.</p> <p>Conduct sediment monitoring, including PAH analysis (e.g. using HPLC methods)</p> <p>Monitor water column and seafloor conditions, including:</p> <ul style="list-style-type: none"> <li>– Physical parameters (sonar detection, leakage identification)</li> <li>– Geochemical parameters (gas concentration, salinity, temperature, pressure)</li> </ul> <p>Carry out waste monitoring, including waste quantities and types, chemical composition, radioactive waste (solid and aqueous streams).</p> |

The document also promotes the selection and use of chemicals in accordance with harmonized environmental assessment systems such as the **Harmonised Offshore Chemical Notification Format (HOCNF)** and associated **Offshore Chemical Notification Scheme (OCNS)** procedures developed under the OSPAR framework.

#### 5.4.2.2 Compatibility assessment

The Project has been designed and will be implemented in a manner consistent with the principles and

recommendations set out in the European Commission BAT Guidance Document for Offshore Hydrocarbon Exploration and Drilling Activities. The Project incorporates internationally recognized engineering and operational standards, pollution prevention and control measures, environmentally responsible chemical selection and management procedures, drill cuttings and waste handling arrangements, spill prevention and emergency response systems, and continuous environmental monitoring programs intended to minimize potential impacts on the marine environment.

The compatibility of Project design with proposed risk management approaches and best available techniques for offshore activities is analysed in Table 5-13.

**Table 5-13: Compatibility of Project design with Best Risk Management Approaches and Best Available Techniques**

| OFFSHORE ACTIVITY                             | BEST RISK MANAGEMENT APPROACHES (BRMA) / BEST AVAILABLE TECHNIQUES (BAT)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | PROJECT DESIGN PROVISIONS AND COMPATIBILITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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| 1. Handling of Drill Cuttings & Drilling Muds | <p>BRMAs include implementation of an integrated HSE Management System, environmental baseline surveys, EIA/ENVID assessments (covering discharge estimation, mud properties, chemical substitution, and risk evaluation), and specialist studies on well design and cuttings behaviour, with strong emphasis on minimising OBM use, avoiding discharges in sensitive areas, and monitoring cuttings where hydrocarbon-bearing zones may be encountered.</p> <p>BATs focus on practical waste and cuttings management options, including offshore reuse of drilling muds, offshore reinjection of cuttings where suitable disposal wells exist, controlled offshore discharge of non-hydrocarbon-bearing cuttings, and onshore treatment pathways such as thermal desorption, biological treatment, beneficial reuse, and disposal via landfill or incineration only as a last resort.</p> | <p>The Project uses water-based mud (WBM) across all well sections, with no NADF/OBM use.</p> <p>Riserless sections (conductor and 26" hole) involve seawater and viscous sweeps with seabed discharge, while deeper sections use a closed-loop circulation system with shale shakers and centrifuges to remove cuttings before discharge. Cuttings are discharged either at seabed or at ~12 m below sea level, depending on the well section. Quantities are assessed in Section 6.9.1.1, with conservative totals (~490 t seabed; ~453 t at 12 m).</p> <p>Drilling fluids are largely seawater-based (~96%) with biodegradable additives. No hydrocarbon-contaminated cuttings are discharged; such material is captured and shipped to shore.</p> <p>The approach is consistent with MARPOL and Barcelona Convention requirements.</p> |
| 2. Handling & Storage of Hydrocarbons         | <p>BRMAs include implementation of a comprehensive HSE Management System and documentation, application of inherently safe design principles supported by EIA/ENVID assessment, spill contingency planning, robust well control measures during drilling and completion (including blowout prevention and safe well testing), and systematic incident recording with corrective and preventive actions.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <p>No hydrocarbon production, testing, or flaring is planned (Section 6.10.1.1). Well operations are limited to exploration drilling.</p> <p>Well control is ensured with well barriers, including the hydrostatic pressure of the fluid and a secondary barrier with the BOP stack and associated well control equipment, and emergency procedures.</p> <p>Any potential hydrocarbon-contaminated cuttings (e.g. from unexpected zones or upsets) are not discharged and are contained and shipped to shore under controlled waste procedures (Section 6.9.1.1.2).</p> <p>Spill prevention and emergency response are covered through vessel response plans and SOPEP-type systems referenced across operational sections (Section 6.6.7).</p>                                                                                            |
| 3. Handling & Storage of Chemicals            | <p>BRMAs include implementation of an HSE Management System supported by full regulatory compliance with REACH and EU Biocides Regulation, application of the OSPAR HMCS (or equivalent) for chemical screening, risk assessment, and discharge control, and incorporation of inherently safe engineering</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <p>Chemicals are limited to drilling-related additives (e.g. viscosifiers, barite, potassium chloride, polymers, cement additives, pipe dope).</p> <p>The selection of chemicals follows recognised offshore classification approaches, including OSPAR HOCNF and the UK Offshore Chemical</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

| OFFSHORE ACTIVITY                   | BEST RISK MANAGEMENT APPROACHES (BRMA) / BEST AVAILABLE TECHNIQUES (BAT)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | PROJECT DESIGN PROVISIONS AND COMPATIBILITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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|                                     | design to minimise chemical release risks. They also include strict chemical transfer, storage, and operational controls (including bunding, closed systems, trained personnel, and monitored inventories), supported by spill contingency planning, routine inspection and maintenance, and systematic recording, reporting, and investigation of incidents to ensure risks are reduced to ALARP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Notification Scheme, or equivalent methodologies, to support the identification of low-hazard substances. All chemicals are selected under chemical management procedures with preference for low-toxicity and low bioaccumulation products (Section 6.7.1.1).<br>Storage of chemicals includes controlled handling, containment, and spill prevention measures (Section 6.7.1.2).<br>Pipe dope and chemical residues are managed as controlled hazardous waste streams and removed to shore (Sections 6.9.1.1.3 and 6.9.1.4).<br>Hazardous waste streams (oily sludge, solvents, contaminated materials) are segregated, stored onboard, and transferred to licensed facilities (Section 6.9.1.4).                                                                                                                                                                                                       |
| 4. Energy Efficiency                | BRMAs include early integration of energy efficiency into planning and environmental assessment processes, supported by the implementation of a comprehensive Energy Efficiency Management System covering the full project lifecycle, with defined policies, targets, monitoring, benchmarking, audits, and continuous improvement driven by senior management oversight. They also include energy-efficient engineering design and performance tracking to optimise consumption and equipment operation across the facility.<br>BATs focus on conducting energy efficiency studies during concept development to optimise design and equipment selection, implementing robust energy monitoring systems (including sensors and analytics) to identify inefficiencies, and improving utilities and auxiliary systems through measures such as heat recovery, cooling optimisation, and energy-efficient lighting (e.g., LED systems and use of natural light). | Energy use is indirectly optimised through short-duration drilling campaign design (67 days), logistics planning, and efficient vessel deployment.<br>Fuel use and emissions are quantified for MODU, support vessels, and helicopters (Sections 6.7.3 and 6.10.1.2), including use of compliant fuels under the Mediterranean Sea Sulphur Emission Control Area (0.10% sulphur limit).<br>A formal Energy Management System, performance KPIs, and BAT-driven energy optimisation programme should be established during Project implementation.                                                                                                                                                                                                                                                                                                                                                         |
| 6. Management of Fugitive Emissions | BRMAs include implementation of an HSE Management System, an Emissions Management Plan and a structured fugitive emissions inventory that identifies all emission sources, quantifies emissions using consistent methodologies, and integrates findings into environmental risk assessments and engineering design to minimise releases. They also include a formal LDAR programme with routine inspections, leak screening, equipment registers, and maintenance of records to ensure timely detection, repair, and reporting of fugitive emissions.<br>BATs focus on minimising leak potential through inherently low-emission design (e.g., reducing flanges, using welded piping, high-integrity seals, dry gas compressor seals, and zero-bleed controllers), combined with design for easy inspection access and fixed gas detection systems.<br>Operationally, BATs include routine LDAR using                                                           | Emissions arise solely from combustion sources: the MODU (IMO Tier I engines), support vessels, and helicopters. Fuel use complies with MARPOL Annex VI and Mediterranean Sea Sulphur Emission Control Area requirements, with low-sulphur marine fuel and Jet A-1 aviation fuel assumptions.<br>Emissions (NO <sub>x</sub> , SO <sub>x</sub> , CO, PM, CO <sub>2</sub> ) are quantified for a 67-day campaign (~331 t NO <sub>x</sub> total). Impacts are assessed, considering their short-term nature, as well as the offshore location (~44 km from shore) and dispersion conditions.<br>The design minimises potential fugitive releases through closed-loop mud circulation, solids control, BOP systems, well integrity barriers, and real-time LWD monitoring. No routine venting or flaring is planned, and methane emissions are limited to combustion-related sources only (Section 6.10.1.2). |



| OFFSHORE ACTIVITY            | BEST RISK MANAGEMENT APPROACHES (BRMA) / BEST AVAILABLE TECHNIQUES (BAT)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | PROJECT DESIGN PROVISIONS AND COMPATIBILITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              | handheld detectors and optical gas imaging, verified leak testing during maintenance, trained personnel, and adoption of advanced methane detection technologies to improve emissions quantification and control.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 8. Drain Water Management    | <p>BRMAs include implementation of an HSE Management System supported by engineering design measures to minimise releases, with drainage-related discharges and risks addressed through environmental risk assessments (e.g. EIA/ENVID) and backed by spill contingency planning for drainage incidents.</p> <p>BATs focus on robust drain system design and operation, including segregation of open/closed and hazardous/non-hazardous drains, prevention of cross-contamination or overboard releases, adequate containment (bunds, drip trays, coamings), properly sized and accessible drain infrastructure, and provision for monitoring, sampling, and recovery of hydrocarbons where applicable. Operational BATs include controlled chemical inventories, prevention of inappropriate drain inputs during maintenance, routine inspection and maintenance via planned systems, personnel training, and use of diversion systems and spill response practices to ensure contaminants are captured and appropriately managed.</p> | <p>Offshore drainage will be managed through good housekeeping, containment, and waste segregation systems.</p> <p>In accordance with MARPOL Annex I, Greek implementing legislation and the Barcelona Convention Offshore Protocol, bilge and deck drainage discharges will be managed to prevent pollution through the application of approved treatment systems, operational controls, inspection and monitoring procedures (Section 6.8.1.1).</p> <p>Drilling discharges (fluids, cuttings, cement residues, and BOP hydraulic fluids) are controlled and discharged via defined subsea outlets at seabed or ~12 m depth under regulated conditions (Sections 6.9.1.1 &amp; 6.9.1.4).</p> <p>Hazardous and non-hazardous waste streams (including MSW, food waste, oils, sludge, chemicals) are segregated and stored onboard for transfer to shore (Section 6.9.1).</p> |
| 9. Facility Decommissioning  | <p>BRMAs include maintaining an HSE Management System across the full project lifecycle, comparative assessments of decommissioning options to identify the safest and most environmentally sound approach, and development of a regulator-approved Decommissioning Plan covering wells, facilities, and associated infrastructure. They also include integration of decommissioning into EIA/ENVID risk assessments, early consideration of end-of-life options in engineering design, and implementation of post-decommissioning monitoring and aftercare to confirm environmental performance and regulatory compliance.</p>                                                                                                                                                                                                                                                                                                                                                                                                          | <p>Decommissioning is fully integrated into the drilling programme (Section 6.14). After drilling, the well will be plugged and abandoned (P&amp;A) using cement barriers. The MODU will be demobilised, riser and BOP recovered, and seabed cleared of equipment via ROV survey. The wellhead will be left as a minimal-footprint structure. Onshore, the temporary logistics base will be fully demobilised with no permanent infrastructure.</p>                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 10. Environmental Monitoring | <p>BRMAs include implementation of an HSE Management System with a structured, risk-based Environmental Monitoring Programme, covering all project phases from baseline through operations to decommissioning, with monitoring scope defined according to installation type, environmental sensitivity, and potential impacts. They also include use of recognised standards (CEN/ISO), representative sampling and measurement methods, QA/QC procedures, and integration of monitoring requirements into engineering design to ensure robust data collection, interpretation, and reporting.</p> <p>BATs include incorporation of dedicated sampling ports and monitoring systems in</p>                                                                                                                                                                                                                                                                                                                                               | <p>Monitoring includes continuous drilling parameter monitoring (pressure, flow, LWD data), environmental baseline and seabed surveys, and post-operation ROV seabed clearance surveys (Section 6.6.6 &amp; 6.14.2.1).</p> <p>Air emissions are fully inventoried using IMO and EMEP/EEA methodologies, covering NO<sub>x</sub>, SO<sub>x</sub>, PM, CO and greenhouse gases (Section 6.10).</p> <p>Waste streams are quantified and tracked through onboard systems (e.g. Garbage Record Book, hazardous waste tracking).</p>                                                                                                                                                                                                                                                                                                                                               |

| OFFSHORE ACTIVITY | BEST RISK MANAGEMENT APPROACHES (BRMA) / BEST AVAILABLE TECHNIQUES (BAT)                                                                                                                                                                                                                                                                                                                                                                                                                                               | PROJECT DESIGN PROVISIONS AND COMPATIBILITY |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
|                   | design (e.g. for combustion sources and drainage), use of standard emission factors updated with operational data, and installation of continuous or periodic monitoring equipment such as OIW analysers and flow meters. Operational BATs cover systematic monitoring of air emissions, fuel use, discharges, sediments, and water column conditions, alongside waste tracking and chemical composition analysis, supported by appropriate analytical methods, modelling, and environmental performance verification. |                                             |

## 5.5 Standards and Emission limits according to national & international legislation

### 5.5.1 Air quality standards

Air quality should be maintained in accordance with the provisions, limit values and guidelines set out in the following documents:

- JMD 14122/549/E103/24-03-2011 (GG B' 488), which establishes measures for improving air quality in compliance with Directive 2008/50/EC.
- JMD 22306/1075/E103/29-05-2007 (B' 920), which sets target values and assessment limits for concentrations of arsenic, cadmium, mercury, nickel, and polycyclic aromatic hydrocarbons in the air, in accordance with Directive 2004/107/EC.
- Ministerial Council Acts 25/18.3.88 (GG 52/A/22.3.88) and 34/30.5.02 (GG 125/A/5.6.02), "Limit and guideline values for air quality regarding sulfur dioxide, nitrogen dioxide and nitrogen oxides, particulate matter, and lead."
- PD 1180/81 (GG 293/A/1981) regarding point emissions of solids (suspended particles) from construction sites and project facilities sets a limit of 100 mg/m<sup>3</sup> (Article 2, paragraph d).

Table 5-14 presents limit values for the concentration of air pollutants according to JMD 14122/549/E103/2011 (GG 488/B/2011).

**Table 5-14: Limit values for concentrations of gaseous pollutants in the environment according to JMD 14122/549/E.103/2011**

| POLLUTANT SUBSTANCE                                                                   | LIMIT VALUE                      | DATE OF LIMIT VALUE ACHIEVEMENT | TOLERANCE MARGIN |
|---------------------------------------------------------------------------------------|----------------------------------|---------------------------------|------------------|
| <b>Carbon Monoxide (CO) (mg/m<sup>3</sup>) (Directive 2008/50/EC)</b>                 | 10<br>Maximum daily 8-hour value | 1/1/2005                        | 60%              |
| <b>Benzene (C<sub>6</sub>H<sub>6</sub>) (µg/m<sup>3</sup>) (Directive 2008/50/EC)</b> | 5<br>Annual average value        | 1/1/2010                        |                  |

| POLLUTANT SUBSTANCE                                                                | LIMIT VALUE                                                                                     | DATE OF LIMIT VALUE ACHIEVEMENT | TOLERANCE MARGIN            |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|---------------------------------|-----------------------------|
| <b>Sulfur Dioxide (SO<sub>2</sub>) (µg/m<sup>3</sup>) (Directive 2008/50/EC)</b>   | 350<br>Hourly average value, not to be exceeded more than 24 times per year                     | 1/1/2005                        | 150 µg/m <sup>3</sup> (43%) |
|                                                                                    | 125<br>Daily average value, not to be exceeded more than 3 times per year                       | 1/1/2005                        |                             |
|                                                                                    | 500<br>Warning threshold, for 3 consecutive hours                                               |                                 |                             |
| <b>Nitrogen Dioxide (NO<sub>2</sub>) (µg/m<sup>3</sup>) (Directive 2008/50/EC)</b> | 200<br>Hourly average value, not to be exceeded more than 18 times per year                     | 1/1/2010                        |                             |
|                                                                                    | 40<br>Annual average value                                                                      | 1/1/2010                        |                             |
| <b>PM<sub>10</sub> Particles (µg/m<sup>3</sup>) (Directive 2008/50/EC)</b>         | 50<br>Daily average value, not to be exceeded more than 35 times per year                       | 1/1/2005                        | 50%                         |
|                                                                                    | 40<br>Annual average value                                                                      | 1/1/2005                        | 20%                         |
| <b>Lead (Pb) (µg/m<sup>3</sup>) (Directive 2008/50/EC)</b>                         | 0.5<br>Annual average value                                                                     | 1/1/2005                        | 100%                        |
| <b>Ozone (O<sub>3</sub>) (µg/ m<sup>3</sup>) (Directive 2008/50/EC)</b>            | 120<br>Maximum daily 8-hour average value, not to be exceeded more than 25 times within 3 years | 1/1/2010                        |                             |
|                                                                                    | 180<br>Alert threshold, hourly average value                                                    |                                 |                             |

### 5.5.2 Acoustic environment quality standards

For the assessment and management of **environmental noise**, the provisions of JMD 13586/724/28.3.2006 (GG B' 384) apply, as amended by Ministerial Decisions 13757/255/2022 (GG 710/B/16.2.2022) and 27136/1793/2018, (GG 6108/B/31.12.2018), which established measures, conditions, and methods for evaluating and managing noise in the environment in compliance with the provisions of Directive 2002/49/EC.

For the **noise emitted by construction equipment**, the provisions of JMD 37393/2028/29.3.2003 apply, which establish measures and conditions for noise emissions into the environment from equipment intended for outdoor use (GG B' 1418), as amended by JMD 9272/471/2.3.2007 (B' 286). For construction works, the limit for the Leq index at a distance of 100 meters from the boundaries of the construction site is Leq = 65 dB(A), based on the limits set by Presidential Decree 1180/81 (GG 293/A/06.10.1981) as the maximum permissible noise level from industrial and all types of mechanical installations. Additionally, the following apply regarding noise from construction activities:

- Presidential Decree 57/2010 (GG 97/A/25.6.2010) — Adaptation of Greek Legislation to Directive 2006/42/EC of the European Parliament and of the Council “on machinery and amending Directive 95/16/EC,” repealing PDs 18/96 and 377/93, as amended by PD 81/2011 (GG 197/A/9.9.2011) “Amendment of PD 57/2010 (97/A) in compliance with Directive 2009/127/EC of the European Parliament and of the Council ‘amending Directive 2006/42/EC.’”
- Ministerial Decision 56206/1613/1986 (GG 570B/9.9.1986) — “Specification of noise emission from machinery and construction site devices in compliance with Directives 79/113/EEC, 81/1051/EEC, 85/405/EEC.”
- Ministerial Decision 69001/1921/1988 (GG 751/B/18.10.1988) on the "EEC type approval for the limit noise level of machinery and construction site devices, specifically motor-driven air compressors, tower cranes, welding generator sets, power generator sets, and portable concrete breakers and pneumatic hammers," as amended by Ministerial Decision 10399Φ5.3/361/91 (GG 359B/28.5.1991) on the "Determination of the noise limit level for tower cranes as a supplement to Ministerial Decision 69001/1921/1988."
- Ministerial Decision 765/1991 (GG 81B/21.2.1991) on the "Determination of noise limit levels for hydraulic shovels, cable shovels of earth movers, loaders, and loader-excavators," as amended by Ministerial Decision 11481/523/97 (GG 295B/11.4.1997).

The maximum permissible limits of **environmental traffic noise** are defined in the JMD 211773/27.4.2012 (GG B' 1367) for the establishment of evaluation indicators and maximum permissible limits of environmental noise indicators originating from the operation of transportation projects.

Thus, the maximum permissible limits for traffic noise indicators are specified as follows:

- For the Lden indicator (24-hour): 70 dB(A),
- For the Lnight indicator (8-hour nighttime): 60 dB(A)

measured at a height of  $4.0 \pm 0.2$  m (3.8 to 4.2 m) above the ground and at a minimum distance of 2 m from the most exposed façade (towards the respective linear source of traffic noise) — either an external wall or window frame — of residential buildings and other sensitive uses requiring protection.

Lden is an indicator of the overall noise level during the day, evening, and night, used to quantify the annoyance associated with noise exposure. Lnight is an indicator of the noise level during the night. The values of the Lden and Lnight indicators are determined using a standardized common methodology set out in Annex II of the Directive, employing specific estimation methods as well as measurements.

### 5.5.3 Water and wastewater quality standards

The study area of the project falls within the Water District (WD) EL05 “Epirus”, for which River Basin Management Plans (RBMPs) have been prepared and approved, in accordance with the requirements of Directive 2000/60/EC, as implemented by Law 3199/2003 and Presidential Decree 51/2007.

The Water District of Epirus (EL05) consists of six (6) river basins: those of the Aoos (EL0511), the Kalamas (EL0512), the Acherontas (EL0513), the Arahthos (EL0514), the Kerkyras - Paxos (EL0534) and the Louros (EL0546).

More specifically, the onshore installations belong to the river basin of Kalamas (EL0512).

### 5.5.3.1.1 Water and Soil Quality Standards

#### 5.5.3.1.1.1 Surface waters

According to Measure **M05B0701** of the 1st Revision of the River Basin Management Plan (RBMP) of the Epirus Water District (WD) (GG 4664/B/2017), which remains unchanged in the 2nd Revision of the RBMP of the Epirus WD (GG 71/A/2024), to maintain and improve water quality, it is necessary to intensify inspections for water pollution originating from point-source discharges (urban, industrial, livestock waste, etc.).

This measure applies horizontally to all projects and activities that operate as point sources of discharges. Particular attention should be given to activities identified as exerting significant pressure per River Basin District (RBD) and per Regional Unit, and/or to those located within Drinking Water Protection Zone II under measures M05B0401 and M05B0403 of the same document.

The competent inspection authorities, in cooperation with the Water Directorates, shall establish an annual program of sampling inspections.

To facilitate the establishment of guidelines and the development of the necessary tools that will support the authorities responsible for environmental licensing in setting emission limits for the effective control of wastewater and industrial liquid waste discharges into surface water bodies, Measure M05B0702 was implemented.

Within the framework of implementing Measure M05B0702, specifications will be defined and the necessary tools will be developed (including a pilot application). These tools will make use of data from the “Management Tools,” the “Pollution Sources Registry,” and the analysis of point-source pressures for their further specialization at the River Basin District (RBD) level, with the aim of establishing emission limits for priority substances and other pollutants affecting surface waters, as set out in JMDs 51354/2641/E103/2010 and 170766/2016, as amended, as well as for other substances.

During this process, the following shall be considered:

- i. The Environmental Quality Standards established by JMDs 51354/2641/E103/2010 and 170766/2016.
- ii. The provisions of Directive 91/271/EEC.
- iii. The minimum river flow and the maximum discharges of liquid waste from various industrial and other activities (including Wastewater Treatment Plants – WWTPs).
- iv. The sensitivity character of the area.
- v. The daily and annual pollutant load generated by the activity.
- vi. The concentration of pollutants generated by the activity.
- vii. The relationship with protected areas concerning drinking water.

The Emission Limit Values shall constitute the maximum discharge limits per River Basin District (RBD), which in all cases must be complied with by the liquid waste effluents of industrial and other activities (including WWTPs) operating within the drainage basin.

#### 5.5.3.1.1.2 Groundwater

For groundwater, the established quality standards of Ministerial Decision 1811/2011 (GG 3322/B/2011) apply, which were adopted in implementation of paragraph 2 of Article 3 of JMD 39626/2208/E130/2009 (GG 2075/B/2009) (Table 5-15).

**Table 5-15: Quality standards of Ministerial Decision 1811/2011 for groundwater**

| PARAMETER                                                                              | QUALITY STANDARDS   |
|----------------------------------------------------------------------------------------|---------------------|
| Nitrates                                                                               | 50 mg/lit           |
| Active pesticide substances (including metabolites, degradation and reaction products) | 0,1 µg/lit          |
| Total pesticides*                                                                      | 0,5 µg/lit (total*) |
| pH                                                                                     | 6,5 - 9,5           |
| Conductivity                                                                           | 2.500 µScm          |
| Arsenic                                                                                | 10 µg/lit           |
| Cadmium                                                                                | 5 µg/lit            |
| Lead                                                                                   | 25 µg/lit           |
| Mercury                                                                                | 1 µg/lit            |
| Nickel                                                                                 | 20 µg/lit           |
| Total Chromium                                                                         | 50 µg/lit           |
| Aluminum                                                                               | 200 µg/lit          |
| Ammonium                                                                               | 0,5 mg/lit          |
| Nitrites                                                                               | 0,5 mg/lit          |
| Chloride ions                                                                          | 250 mg/lit          |
| Sulfate ions                                                                           | 250 mg/lit          |
| Sum of trichloroethylene and tetrachloroethylene                                       | 10 µg/lit           |

#### 5.5.3.1.1.3 Other Provisions

For the wider protection of surface water, groundwater, and soil from pollution arising from any type of runoff (e.g., suspended solids or sludge) and non-biodegradable substances (e.g., lubricants) generated during the construction works and the operation of construction-site facilities, the following legislation and requirements shall apply:

- Law 3199/2003 (GG A' 280), "Protection and Management of Waters – Harmonization with Directive 2000/60/EC of the European Parliament and of the Council", as amended and in force.
- Presidential Decree 51/2007 (GG A' 54), "Establishment of measures and procedures for the integrated protection and management of waters in compliance with Directive 2000/60/EC establishing a framework for Community action in the field of water policy".
- JMD 39626/2208/E130/25.09.2009 (GG B' 2075), concerning the establishment of measures for the protection of groundwater against pollution and deterioration.
- Presidential Decree 82/25.02.2004 (GG A' 64), "Management of Waste Lubricating Oils", with regard to the management procedures for used mineral oils.
- JMD 72751/3054/22.10.1985 (GG B' 665), "Toxic and Hazardous Waste and Elimination of



Polychlorinated Biphenyls and Polychlorinated Terphenyls in compliance with Directives 78/319/EEC and 76/403/EEC”, as amended and in force, with regard to the disposal and management of hazardous waste.

- Law 4042/2012 (GG A' 24), as amended and in force, the National Waste Management Plan (JMD 51373/4684/2015, GG B' 2706), and Law 2939/2001 (GG A' 179), as amended by Law 4496/2017 (GG A' 170), concerning source segregation, collection, transport, and management of solid waste, hazardous waste, recyclable and non-recyclable materials.
- The provisions of JMD 7589/731/29.03.2000 (GG B' 514) establishing measures and conditions for the management of polychlorinated biphenyls and polychlorinated terphenyls (PCB/PCT).
- Any specific requirements, restrictions, or provisions imposed and applicable within the Project area.

### 5.5.3.2 Wastewater Standards

#### 5.5.3.2.1 Wastewater Discharge Limit Standards

The wastewater discharge limit standards are defined in the Health Regulation E1β/221/65 concerning the "Disposal of liquid waste." Specifically, the quality standards and discharge limits for wastewater discharged into waters intended for swimming and any other use except for water consumption are as follows:

- pH 6,5 - 8,5.
- Dissolved oxygen 5 mg/l.
- Coliform bacteria 0 – 50 / 100ml.
- Absence of settling solids or sludge deposits originating from liquid or industrial waste
- Non-toxic, non-harmful, or non-thermal wastewater

Additionally, wastewater must be effectively treated before its discharge into the final recipient. The city of Igoumenitsa is served by the Igoumenitsa Wastewater Treatment Plant (WWTP - EL212001012), which forms part of the urban wastewater management infrastructure of the Region of Epirus.

The compliance requirements for the treated effluent discharged from the Igoumenitsa Wastewater Treatment Plant are defined in accordance with the Urban Wastewater Treatment Directive 91/271/EEC, as transposed into Greek legislation by Joint Ministerial Decision 5673/400/1997. These requirements relate to the applicable effluent quality limits, the minimum annual number of samples to be collected according to the design capacity of the WWTP, and the maximum number of samples that may deviate from the required effluent standards.

**Table 5-16: Required effluent limits according to Directive 91/271/EEC**

| PARAMETER                                        | LIMIT / REQUIREMENT                                                                      |
|--------------------------------------------------|------------------------------------------------------------------------------------------|
| BOD <sub>5</sub> at 20 °C, without nitrification | 25 mg/l or 70–90% reduction                                                              |
| COD                                              | 125 mg/l or 75% reduction                                                                |
| Suspended solids (SS)                            | 35 mg/l for agglomerations >10,000 p.e.;<br>60 mg/l for agglomerations 2,000–10,000 p.e. |

|                                            |                                                                                    |
|--------------------------------------------|------------------------------------------------------------------------------------|
| TP, where sensitive receiving waters apply | 2 mg/l for 10,000–100,000 p.e.;<br>1 mg/l for >100,000 p.e.; or 80% reduction      |
| TN, where sensitive receiving waters apply | 15 mg/l for 10,000–100,000 p.e.;<br>10 mg/l for >100,000 p.e.; or 70–80% reduction |

#### 5.5.3.2.2 Sewage from ships, International Convention for the Prevention of Pollution from Ships, MARPOL 73/78, Annex I, IV, V

##### Annex I: Regulations for the Prevention of Pollution by Oil (Entered into force on October 2, 1983)

It covers the prevention of pollution from oil through operational measures, as well as accidental discharges. The 1992 amendments to Annex I made double hulls mandatory for new oil tankers and set a phased timetable for the adaptation of double hulls on existing tankers, which was later revised in 2001 and 2003.

##### Annex IV: Prevention of Pollution from Ship Sewage (entered into force on September 27, 2003)

It includes requirements for controlling marine pollution from sewage. Discharge of sewage into the sea is prohibited unless the ship is equipped with and operating an approved sewage treatment plant, or if the ship discharges comminuted and disinfected sewage using an approved system at a distance greater than three nautical miles from the nearest shore. Sewage that is neither comminuted nor disinfected must be discharged at more than 12 nautical miles from the nearest shore.

##### Annex V: Prevention of Pollution by Garbage from Ships (entered into force on December 31, 1998)

It includes various types of garbage and specifies the distances from the shore and the way they can be disposed of. The most important feature of the Annex is the complete prohibition it imposes on the discharge of any form of plastic into the sea.

#### 5.5.4 Standards and limit values according to international legislation for offshore discharges and emissions (Asopus – 1 exploration well)

##### 5.5.4.1 Quality Standards for discharges related to the drilling process

##### 5.5.4.1.1 Quality standards for drilling fluids and cuttings discharges

Greece, as a Contracting Party to the Barcelona Convention and its Offshore Protocol, implements the UNEP/Mediterranean Action Plan (MAP) Common Standards and Guidelines (2022)<sup>26</sup> for the use and disposal of drilling fluids and cuttings in the Mediterranean. These standards require the establishment of a project-related Chemical Use Plan. As mentioned within the guidance document:

“A Chemical Use Plan shall be prepared for the use of all drilling fluids by the Operator in line with the Environmental Impact Assessment (EIA) for all offshore activities. The Chemical Use Plan must quantify and

<sup>26</sup> Decision IG.24/9 – Mediterranean Offshore Guidelines and Standards: (a) Common Standards and Guidance on the Disposal of Oil and Oily Mixtures and the Use and Disposal of Drilling Fluids and Cuttings; (b) Common Standards and Guidelines for Special Restrictions or Conditions for Specially Protected Areas (SPA) within the Framework of the Mediterranean Offshore Action Plan

assess the environmental risk of each chemical additive that may potentially be used during the drilling, cementing and completion of the well. Subsequent well operations, including well intervention, workover, suspension and abandonment operations will be subject to similar requirements”.

Selecting water-based drilling fluids (WBM) and additives that are low in toxicity, have limited bioaccumulation, and are highly biodegradable is strongly favorable against Non-Aqueous Based Fluids (NADF) and most commonly used. As also highlighted within the guidance:

” Under specific circumstances, used WBM and associated drill cuttings may be disposed of by discharging into the sea. A permit from the Competent Authority must be obtained for the usage and discharge of WBM offshore and WBM cuttings”

When drilling through reservoir sections of the well, cuttings originating from the pay zone (hydrocarbon-bearing formation), together with the associated drilling fluids returned to the surface, may contain small quantities of reservoir hydrocarbons such as crude oil or condensate. Any cuttings and/or water-based muds (WBM) contaminated by reservoir fluids should be either 1.) collected, contained, and transported to shore for appropriate treatment and disposal 2.) be re-injected into a suitable geological formation where feasible or 3.) subject to approval by the Competent Authority, treated to achieve the applicable environmental performance standards prior to discharge to the marine environment with authorized discharges strictly monitored and reported to the Competent Authority.

The use of non-aqueous drilling fluids is strictly controlled, and their discharge is prohibited. Discharges of drilling fluids and cuttings to the sea must be minimised and managed through proper planning, fluid design, and operational practices.

The discharge of WBM and cuttings to the seabed during shallow hole sections is accepted industry practice for deepwater exploration and is consistent with Greece’s obligations under the Barcelona Convention Offshore Protocol and the UNEP/MAP Common Standards and Guidelines, which permit the discharge of water-based mud and cuttings subject to chemical selection and discharge minimisation requirements.

#### 5.5.4.1.2 Quality Standards for cementing discharges

Cement is used to seal the casing-formation annulus after each hole section is drilled, providing long-term zonal isolation and well integrity. The cement slurry is primarily composed of cement powder, water and selected cement additives (e.g. retarders, accelerators, fluid-loss additives) are screened in accordance with UNEP/MAP offshore chemical requirements and the operator’s Chemical Use Plan, with preference given to additives of low environmental risk.

#### 5.5.4.1.3 Quality standards for BOP discharges

The subsea blowout preventer (BOP) stack is installed as a primary well-control barrier and is routinely operated and tested during drilling, including opening and closing of annular and ram preventers as part of planned function and pressure tests. During these operations, and during any required lower marine riser package (LMRP) disconnects, a proportion of the water-based hydraulic control fluid is vented to sea at the seabed, while the remainder is recovered via the BOP control fluid return system. Based on manufacturer information and offshore chemical screening, this water-soluble fluid blend should be classified as readily

biodegradable under recognised OECD test methods and formulated to have low toxicity and limited potential for bioaccumulation.

#### 5.5.4.1.4 Quality standards for operational discharges

The International Convention for the Prevention of Pollution from Ships (MARPOL) is the main international convention covering prevention of pollution of the marine environment by ships from operational or accidental causes.

The MARPOL Convention was adopted on 2 November 1973 at the International Maritime Organisation (IMO).

Drilling operations comprising the drilling unit and support vessels must comply with the International Convention for the Prevention of Pollution from Ships (MARPOL) as implemented in Greek law, including Annexes I (oil), IV (sewage), V (garbage), and any other applicable annexes. Compliance includes using approved pollution prevention equipment, maintaining valid international or national certificates, and monitoring and recording relevant discharges, such as treated bilge water, treated sewage, and authorised garbage discharges, within applicable limits and operational conditions.

#### 5.5.4.1.5 Quality standards for mixtures containing hydrocarbons (oil & oily mixtures)

Annex I - Regulations for the Prevention of Pollution by Oil (entered into force 2 October 1983), covers prevention of pollution by oil from operational measures as well as from accidental discharges. Under International Maritime Organization MARPOL Annex I, Regulation 15, governs the control of discharge of oil from machinery spaces of ships and sets the operational requirements for oily water separation, discharge monitoring, and record keeping. The regulation aims to prevent marine pollution by restricting the discharge of oily mixtures from machinery spaces into the sea unless strict conditions are met.

For ships of 400 gross tonnage and above, oily mixtures from machinery spaces may only be discharged overboard when all of the following conditions are satisfied:

- The ship is proceeding “en route”.
- The oily mixture has been processed through approved oily water filtering equipment.
- The oil content of the effluent does not exceed 15 parts per million (15 ppm).
- The equipment is fitted with:
  - an oil content meter,
  - alarm arrangements, and
  - automatic stopping arrangements preventing discharge above 15 ppm.
- The oily mixture does not originate from cargo pump-room bilges on oil tankers (special tanker rules apply).

For oil tankers, additional restrictions apply depending on ship type and ballast arrangements.

Ships subject to the regulation must carry IMO-approved certificates and MEPC.107(49)<sup>27</sup> compliant:

- Oily Water Separator (OWS),
- 15-ppm bilge alarm,
- automatic stopping device.

MARPOL Annex I Regulation 17 sets out the requirements for maintaining an Oil Record Book (ORB) to document oil-related operations onboard ships.

The ORB is one of the most important statutory pollution-prevention documents carried on board and is closely inspected during flag-state and port-state control examinations.

The purpose of the oil record book is to provide an official record of transfers and discharges of oil and oily mixtures and to allow the authorities to verify compliance with MARPOL discharge regulations.

#### 5.5.4.1.6 Sewage

Annex IV – Regulations for the prevention of pollution by sewage from ships, contains a set of regulations regarding the discharge of sewage into the sea from ships, including regulations regarding the ships' equipment and systems for the control of sewage discharge, the provision of port reception facilities for sewage, and requirements for survey and certification.

It is generally considered that on the high seas, the oceans are capable of assimilating and dealing with raw sewage through natural bacterial action. Therefore, the regulations in Annex IV of MARPOL prohibit the discharge of sewage into the sea within a specified distance from the nearest land, unless otherwise provided.

Governments are required to ensure the provision of adequate reception facilities at ports and terminals for the reception of sewage, without causing delay to ships.

The revised Annex applies to ships, engaged in international voyages, of 400 gross tonnage and above or which are certified to carry more than 15 persons. The Annex requires ships to be equipped with either an approved sewage treatment plant subject to the provisions of MEPC.227(64)<sup>28</sup>, or an approved sewage comminuting and disinfecting system or a sewage holding tank.

Under regulations 9.1.1 and 9.2.1 of MARPOL Annex IV, sewage treatment plants on board ships need to comply with specific design, installation, performance and testing criteria and;

*"should meet the following effluent standards when tested for its Certificate of Type Approval by the Administration:*

1. Thermotolerant Coliform Standard

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<sup>27</sup> MEPC.107(49) – Revised guidelines/specifications for pollution prevention equipment for machinery space bilges of ships

<sup>28</sup> MEPC.227(64) – Guidelines on implementation of effluent standards and performance tests for sewage treatment plants

*The geometric mean of the thermotolerant coliform count of the samples of effluent taken during the test period should not exceed 100 thermotolerant coliforms/100 ml as determined by membrane filter, multiple tube fermentation or an equivalent analytical procedure.*

## 2. Total Suspended Solids (TSS) Standard

- The geometric mean of the total suspended solids content of the samples of effluent taken during the test period should not exceed 35 Qi/Qe mg/l.
- Where the sewage treatment plant is tested on board ship, the maximum total suspended solids content of the samples of effluent taken during the test period may be adjusted to take account of the total suspended solid content of the flushing water. In allowing this adjustment in maximum TSS, Administrations should ensure sufficient tests of TSS are taken of the flushing water throughout the testing period to establish an accurate geometric mean to be used as the adjustment figure (defined as x). In no cases should the maximum allowed TSS be greater than (35 plus x) Qi/Qe mg/l.

*Method of testing should be by:*

- filtration of representative sample through a 0.45 µm filter membrane, drying at 105°C and weighing, or
- centrifuging of a representative sample (for at least five minutes with mean acceleration of 2,800-3,200 g), drying at least 105°C and weighing, or
- other internationally accepted equivalent test standard.

## 3. Biochemical oxygen demand (BOD) without nitrification and chemical oxygen demand.

*Administrations should ensure the sewage treatment plant is designed to reduce both soluble and insoluble organic substances to meet the requirement that, the geometric mean of 5-day biochemical oxygen demand without nitrification (BOD5 without nitrification) of the samples of effluent taken during the test period does not exceed 25 Qi/Qe mg/l and the chemical oxygen demand (COD) does not exceed 125 Qi/Qe mg/l. The test method standard should be ISO 5815 1:2003 for BOD5 without nitrification and ISO 15705:2002 for COD, or other internationally accepted equivalent test standards.*

## 4. pH

*The pH of the samples of effluent taken during the test period should be between 6 and 8.5.*

## 5. Zero or non-detected values

*For thermotolerant coliforms zero values should be replaced with a value of 1 thermotolerant coliform/100 ml to allow the calculation of the geometric mean. For total suspended solids, biochemical oxygen demand without nitrification and chemical oxygen demand values below the limit of detection should be replaced with one half the limit of detection to allow the calculation of the geometric mean”.*

The International Sewage Pollution Prevention Certificate (ISPP Certificate) is a statutory certificate issued under the provisions of Annex VI – Regulations for the prevention of Pollution by Sewage from Ships and confirms that a ship complies with international requirements for sewage collection, treatment, and discharge.

The certificate verifies that the ship has approved arrangements for sewage management, such as:



- an approved sewage treatment plant (STP),
- a sewage comminuting and disinfecting system,
- a sewage holding tank.

It also ensures the vessel complies with MARPOL Annex IV discharge standards.

Sewage which is not comminuted or disinfected may be discharged at a distance of more than 12 nautical miles from the nearest land when the ship is proceeding at not less than 4 knots, and the rate of discharge of untreated sewage shall be in compliance with MEPC.157(55)<sup>29</sup>.

#### 5.5.4.1.7 Garbage

Annex V Prevention of Pollution by Garbage from Ships deals with different types of garbage and specifies the distances from land and the manner in which they may be disposed of. The most important feature of the Annex is the complete ban imposed on disposing into the sea of all forms of plastics.

The 2017 Guidelines for the Implementation of MARPOL Annex V are included within Resolution MEPC.295(71)<sup>30</sup> and provide practical guidance for implementing the provisions of Annex V – Prevention of Pollution by Garbage from Ships.

*Under the revised MARPOL Annex V, “discharge of all garbage into the sea is prohibited, except as specifically permitted in regulations 3, 4, 5 and 6 of the Annex. Annex V reverses the historical presumption that garbage may be discharged into the sea based on the nature of the garbage and defined distances from shore. Regulation 7 provides limited exceptions to these regulations in emergency and non-routine situations. Generally, discharge is restricted to food wastes, identified cargo residues, animal carcasses, identified cleaning agents and additives, and cargo residues entrained in washwater which are not harmful to the marine environment. It is recommended that ships use port reception facilities as the primary means of discharge for all garbage”*

“Garbage” is clearly defined in section 1.7 of the Guidelines and presents a clear indication of what should or should not be accounted as garbage under MARPOL Annex V.

The guidelines establish strict discharge conditions for food waste based on distance from land, whether the waste is comminuted, and whether the ship operates inside a MARPOL Special Area such as the Mediterranean Sea, where most garbage discharges are prohibited. The resolution also details requirements for Garbage Management Plans on ships of 100 GT and above or ships carrying 15 persons or more, requiring procedures for garbage collection, segregation, storage, processing, and disposal. In addition, ships of 400 GT and above or ships carrying 15 persons or more on international voyages must maintain a Garbage Record Book documenting all garbage discharges, shore disposals, incineration, and accidental losses. Ships of 12 meters or more in length must display garbage placards informing crew and passengers of disposal restrictions. MEPC.295(71) further emphasizes the importance of adequate port reception facilities and crew training to reduce marine litter and improve compliance. During Port State Control inspections,

<sup>29</sup> MEPC.157(55) – Recommendation of standards for the rate of discharge of untreated sewage from ships

<sup>30</sup> MEPC.295(71) – 2017 Guidelines for the implementation of MARPOL Annex V

authorities commonly verify Garbage Record Books, garbage segregation practices, storage arrangements, placards, and receipts from shore reception facilities to ensure compliance with Annex V regulations.

Ultimately, according to section 2.3.1 *“Regulation 3 of MARPOL Annex V provides that the discharge of garbage into the sea is prohibited, with limited exceptions, as summarized in table 1. Under certain conditions discharge into the sea of food wastes, animal carcasses, cleaning agents and additives contained in hold washwater, deck and external surface washwater and cargo residues which are not considered to be harmful to the marine environment is permitted”*. Table 5-17 below, presents the discharge exceptions as mentioned in MARPOL Annex V.

**Table 5-17: Summary of restrictions to the discharge of garbage into the sea under regulations 4, 5, 6 and 14 of MARPOL Annex V and chapter 5 of part II-A of the Polar Code.**

| GARBAGE TYPE <sup>1</sup>                                                                                                                                                                                                                            | ALL SHIPS EXCEPT PLATFORMS                                                                               |                                                                                                                                              | OFFSHORE PLATFORMS LOCATED MORE THAN 12 NM FROM NEAREST LAND AND SHIPS WHEN ALONGSIDE OR WITHIN 500 M OF SUCH PLATFORMS <sup>4</sup> REGULATION 5 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                      | OUTSIDE SPECIAL AREAS AND ARCTIC WATERS REGULATION 4 (DISTANCES FROM NEAREST LAND)                       | WITHIN SPECIAL AREAS AND ARCTIC WATERS REGULATION 6 (DISTANCES FROM NEAREST LAND, ICE-SHELF OR FAST ICE)                                     |                                                                                                                                                   |
| Food waste comminuted or ground <sup>2</sup>                                                                                                                                                                                                         | >3 nm, en route and as far as practicable                                                                | >12 nm, en route and as far as practicable <sup>3</sup>                                                                                      | Discharge permitted                                                                                                                               |
| Food waste not comminuted or ground                                                                                                                                                                                                                  | >12 nm, en route and as far as practicable                                                               | Discharge prohibited                                                                                                                         | Discharge prohibited                                                                                                                              |
| Cargo residues <sup>5,6</sup> not contained in washwater                                                                                                                                                                                             | > 12 nm, en route and as far as practicable                                                              | Discharge prohibited                                                                                                                         | Discharge prohibited                                                                                                                              |
| Cargo residues <sup>5,6</sup> contained in washwater                                                                                                                                                                                                 |                                                                                                          | > 12 nm, en route and as far as practicable (subject to conditions in regulation 6.1.2 and paragraph 5.2.1.5 of part II-A of the Polar Code) |                                                                                                                                                   |
| Cleaning agents and additives <sup>6</sup> contained in cargo hold washwater                                                                                                                                                                         | Discharge permitted                                                                                      | > 12 nm, en route and as far as practicable (subject to conditions in regulation 6.1.2 and paragraph 5.2.1.5 of part II-A of the Polar Code) | Discharge prohibited                                                                                                                              |
| Cleaning agents and additives <sup>6</sup> in deck and external surfaces washwater                                                                                                                                                                   |                                                                                                          | Discharge permitted                                                                                                                          |                                                                                                                                                   |
| Animal Carcasses (should be split or otherwise treated to ensure the carcasses will sink immediately)                                                                                                                                                | Must be en route and as far from the nearest land as possible. Should be >100 nm and maximum water depth | Discharge prohibited                                                                                                                         | Discharge prohibited                                                                                                                              |
| All other garbage including plastics, synthetic ropes, fishing gear, plastic garbage bags, incinerator ashes, clinkers, cooking oil, floating dunnage, lining and packing materials, paper, rags, glass, metal, bottles, crockery and similar refuse | Discharge prohibited                                                                                     | Discharge prohibited                                                                                                                         | Discharge prohibited                                                                                                                              |

- 1 When garbage is mixed with or contaminated by other harmful substances prohibited from discharge or having different discharge requirements, the more stringent requirements shall apply.
- 2 Comminuted or ground food wastes must be able to pass through a screen with mesh no larger than 25 mm
- 3 The discharge of introduced avian products in the Antarctic area is not permitted unless incinerated, autoclaved or otherwise treated to be made sterile. In polar waters, discharge shall be made as far as practicable from areas of ice concentration exceeding 1/10 in any case food wastes shall not be discharged onto the ice.
- 4 Offshore platforms located 12 nm from nearest land and associated ships include all fixed or floating platforms engaged in exploration or exploitation or associated processing of seabed mineral resources, and all ships alongside or within 500 m of such platforms.
- 5 Cargo residues mean only those that cannot be recovered using commonly available methods for unloading.
- 6 These substances not to be harmful to the marine environment.

#### 5.5.4.1.8 Ballast water

The International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention) is an international treaty adopted by the IMO in 2004 and entered into force in 2017 to prevent the spread of harmful aquatic organisms and pathogens through ships' ballast water and sediments. Ships use ballast water for stability and safe operation, but when ballast water taken in one region is discharged in another, invasive species can be introduced into foreign marine ecosystems, causing environmental, economic, and public health damage. The Convention requires ships to manage ballast water through approved procedures and treatment systems, maintain a ship-specific approved Ballast Water Management Plan (BWMP) under standard B-1, and keep a Ballast Water Record Book under standard B-2, documenting ballast operations. The Convention establishes two principal standards:

Under D-1 Ballast Water Exchange Standard, ships conducting ballast water exchange must achieve at least 95% volumetric exchange of ballast water to reduce the transfer of harmful aquatic organisms and invasive species. Ballast water exchange should normally be carried out at least 200 nautical miles from the nearest land and in water at least 200 meters deep. If this is not possible, the exchange should be conducted at least 50 nautical miles from the nearest land and in water at least 200 meters deep. Accepted exchange methods include the sequential, flow-through, and dilution methods, provided the operation does not compromise the safety or stability of the ship.

Standard D-2 Ballast Water Performance Standard limits the number of viable organisms discharged by requiring approved Ballast Water Management Systems (BWMS) such as filtration, UV treatment, or electrochlorination systems.

Under Regulation D-3, all ballast water treatment systems must be type-approved according to IMO guidelines and performance testing standards as described within MEPC.300(72)<sup>31</sup>. Ships are also subject to surveys, certification, and Port State Control inspections to verify compliance with ballast water management requirements. The Convention is considered one of the most important international measures for protecting marine biodiversity from invasive aquatic species transferred by global shipping.

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<sup>31</sup> MEPC.300(72) – Code for approval of ballast water management systems (BWMS Code)

#### 5.5.4.1.9 Quality standards for operational emissions

MARPOL Annex VI – Regulations for the Prevention of Air Pollution from Ships, sets limits on sulphur oxide and nitrogen oxide emissions from ship exhausts and prohibits deliberate emissions of ozone depleting substances.

Resolution MEPC.176(58)<sup>32</sup> adopted the revised MARPOL Annex VI. The resolution establishes the international regulatory framework for the prevention of air pollution from ships. The resolution sets limits on emissions of sulphur oxides (SO<sub>x</sub>), nitrogen oxides (NO<sub>x</sub>), particulate matter, and ozone-depleting substances, and establishes requirements for fuel oil quality and the designation of Emission Control Areas (ECAs).

Key emission limits include:

- Fuel oil sulphur content limit between 1.50% m/m and 0.10% m/m within designated SO<sub>x</sub> Emission Control Areas and subject to ship construction date
- NO<sub>x</sub> emission standards for marine diesel engines above 130 kW, implemented through Tier I, Tier II, and Tier III limits subject to engine installation date and operating area (Regulation 13).
- Restrictions on emissions of ozone-depleting substances and controls on shipboard incineration.

Compliance may be achieved using compliant low-sulphur fuels, alternative fuels, approved exhaust gas cleaning systems (scrubbers), NO<sub>x</sub> reduction technologies such as Selective Catalytic Reduction (SCR) or Exhaust Gas Recirculation (EGR), and adherence to fuel quality, monitoring, and record-keeping requirements.

Resolution MEPC.177(58)<sup>33</sup> adopted the NO<sub>x</sub> Technical Code 2008, which provides the technical requirements for demonstrating compliance with the NO<sub>x</sub> emission limits established under MARPOL Annex VI Regulation 13.

The Code applies to marine diesel engines with a power output exceeding 130 kW and establishes:

- Procedures for Engine emission testing and certification.
- Requirements for Engine International Air Pollution Prevention (EIAPP) certification.
- Preparation and maintenance of Engine Technical Files.
- Onboard verification, inspection, and survey procedures.
- Methods for monitoring modifications that may affect NO<sub>x</sub> emissions.

Compliance is demonstrated through pre-certification testing, issuance and maintenance of EIAPP certification, periodic surveys, engine parameter checks, simplified measurement methods, or direct exhaust emission measurements. The Code ensures that certified engines continue to meet the applicable Tier I, Tier II, or Tier III NO<sub>x</sub> emission limits throughout their operational life.

<sup>32</sup> MEPC.176(58) - AMENDMENTS TO THE ANNEX OF THE PROTOCOL OF 1997 TO AMEND THE INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION FROM SHIPS, 1973, AS MODIFIED BY THE PROTOCOL OF 1978 RELATING THERETO

<sup>33</sup>MEPC.177(58) - AMENDMENTS TO THE TECHNICAL CODE ON CONTROL OF EMISSION OF NITROGEN OXIDES FROM MARINE DIESEL ENGINES

## 5.6 Location of the project in relation to the areas of the natural and anthropogenic environment of the region

### 5.6.1 Established boundaries of settlements and approved urban plans

The Port of Igoumenitsa occupies a strategic position along Greece's western seaboard and constitutes one of the country's principal international maritime gateways, providing passenger and freight connections with Italy and the Ionian Islands. As the western terminus of the Egnatia Motorway and a core node of the Trans-European Transport Network (TEN-T), the port serves as a major transport and logistics hub of national and international significance. It is a legally established national port infrastructure facility whose institutional development has been implemented through a series of legislative and administrative acts. The port was initially established as the principal port of the Prefecture of Thesprotia and subsequently operated through the Igoumenitsa Port Fund. Pursuant to *Law 2932/2001 (GG A' 145/2001)*, the Port Fund was transformed into Igoumenitsa Port Authority SA (OLIG SA), which became responsible for the administration, operation, maintenance and development of the port. Through the Concession Agreement signed between the Hellenic Republic and the Port Authority in 2002, the Greek State granted the Authority the right to use, manage and develop the port land zone and associated infrastructure. The current legal and operational framework of the Port of Igoumenitsa is governed by the amended concession agreement ratified by *Law 5048/2023*. Accordingly, the proposed onshore supply base is located within an existing, legally approved and operational port area designated for transport, logistics and port-related activities as described in detail in Chapter 8.

The proposed onshore supply base will be located within the operational area of the Port of Igoumenitsa and the use of existing port facilities for temporary logistics, storage, vessel support, and personnel transfer activities will be consistent with the transport and logistics functions of the port area and will not require modifications to existing boundaries.

The area of the Port of Igoumenitsa is covered by the General Urban Plan (GUP) of the Municipal Unit of Igoumenitsa, which constitutes the principal statutory urban-planning instrument governing land-use allocation, urban development, infrastructure planning, and environmental protection within the municipal area.

The General Urban Plan (GUP) of Igoumenitsa was approved by *Decision 73578/4964/17.12.2010 (GG 575/AAP/31.12.2010)*. Under the approved GUP, the area under consideration has been designated as Port Zone B4.5, within which no land uses or activities other than port-related activities are envisaged, as illustrated in Figure 5-15 below.



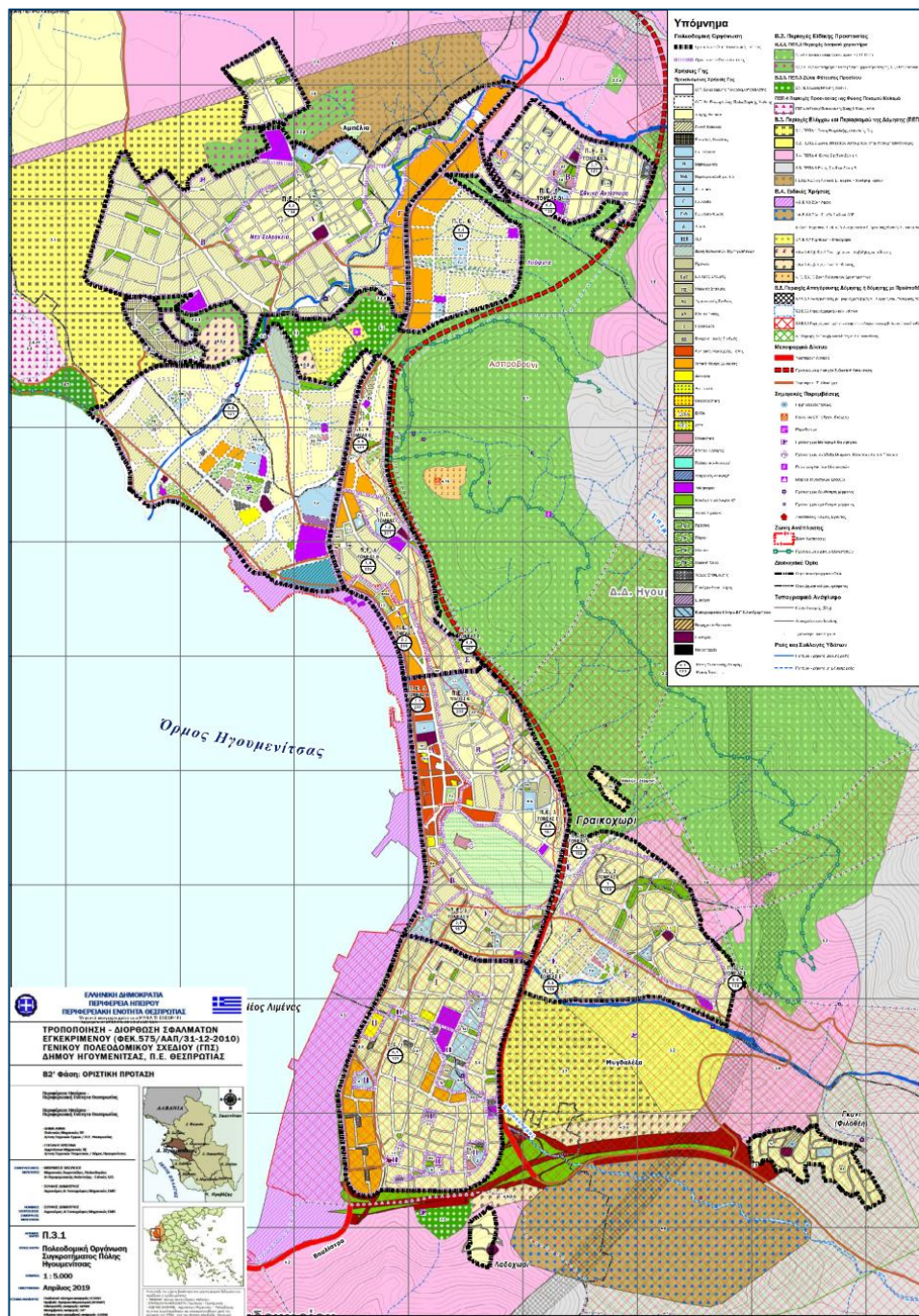


Figure 5-15: Urban Planning Organization Map of the Igoumenitsa City Complex. Extract from the approved General Urban Plan (GUP) of the former Municipality of Igoumenitsa (Source: Decentralized Administration of Epirus and Western Macedonia portal<sup>34</sup>, accessed June 2026)

The existing and proposed Port Zone boundaries are maintained in accordance with the Igoumenitsa Port Master Plan and the decisions of the Port Planning and Development Committee (ESAL), namely *Decision 02/10.12.2002* of the 4th ESAL Session and *Decision 02/17.12.2004* of the 15<sup>th</sup> ESAL Session.

<sup>34</sup> [Μελέτες Γ.Π.Σ. - Σ.Χ.Ο.Ο.Α.Π. - Αποκεντρωμένη Διοίκηση Ηπείρου - Δυτικής Μακεδονίας | www.apdhp-dm.gov.gr](http://www.apdhp-dm.gov.gr)



The determination of land uses within the Port Zone does not fall within the scope of the General Urban Plan but is the responsibility of the Port Planning and Development Committee (ESAL), pursuant to Article 19 of Law 2932/2001 (GG 145/A/2001) and Law 2971/2001 (GG 285/A/2001).

Permitted uses within the Port Zone include port facilities, infrastructure, and associated developments in accordance with the approved Port Development Master Plan and any subsequent relevant planning or technical studies.

The approved General Urban Plan (GUP) in question superseded the previously approved “General Urban Plan of Igoumenitsa–Graikochori and parts of Ladochori and Nea Selefkeia” (GG 610/D/3 October 1989), as amended by the relevant decision published in GG 1073/D/1992.

The most recently approved General Urban Plan (GUP) of Igoumenitsa applies to the administrative area of the former Municipality of Igoumenitsa, which currently constitutes the Municipal Unit of Igoumenitsa within the Municipality of Igoumenitsa. The planning area includes the urban settlement of Igoumenitsa and the communities of Graikochori, Nea Selefkeia, Ladochori, Agia Marina, Agios Vlasios, Kastri, Kryovrysi and Mavroudi. The Port of Igoumenitsa and the proposed onshore supply base are located within this planning area and are therefore subject to the provisions and land-use designations established by the approved General Urban Plan.

The nearest urban and settlement planning instruments (Figure 5-16) include the settlement planning frameworks of the Municipal Units of Plataria, Syvota, Perdika and Margariti. However, these latter plans do not overlap with the project area.

In addition, the Municipality of Igoumenitsa is included in the ongoing Special Urban Planning Scheme (SUPS) for the Coastal Front of the Region of Epirus, which is intended to provide updated spatial planning guidance for coastal municipalities. Nevertheless, the proposed project relies exclusively on existing port infrastructure and does not involve the construction of new permanent facilities or the expansion of urban development areas.

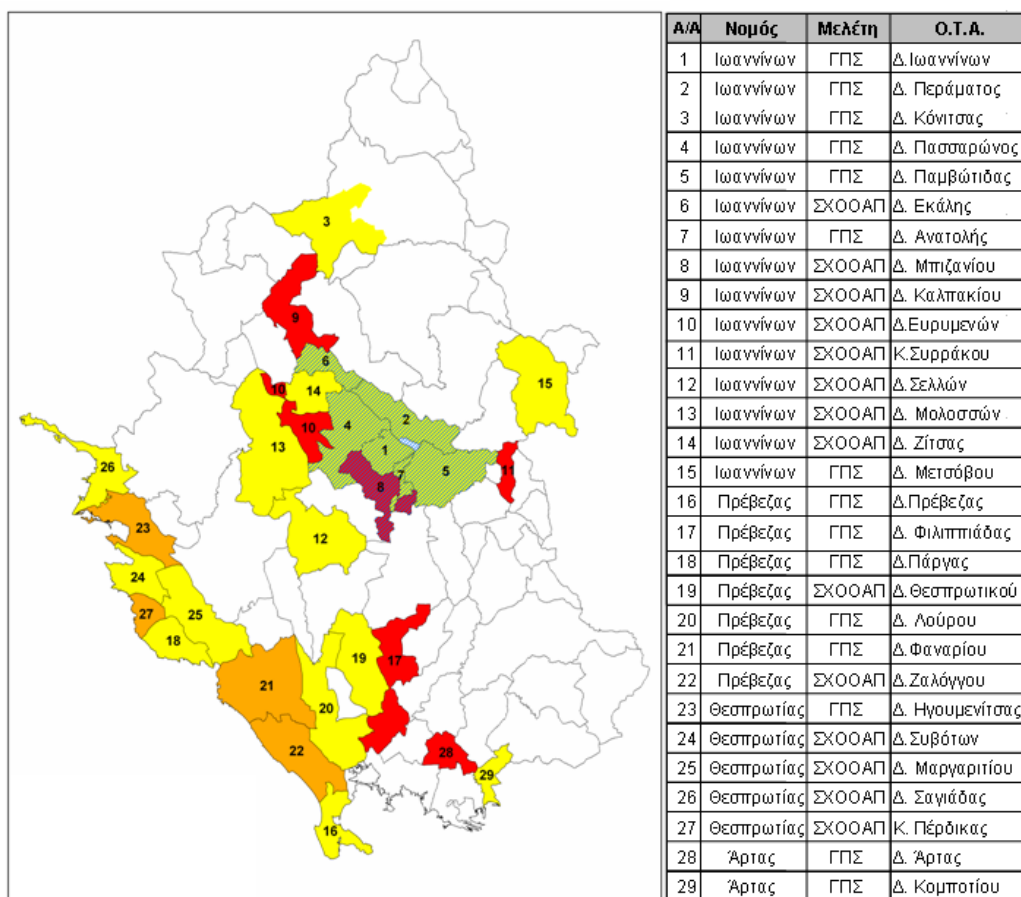


Figure 5-16: Spatial and Residential Organization Plans (ΣΧΟΟΑΠ) of Syvota, Margariti, Sagiada & Perdika numbered 24, 25, 26 and 27 respectively (Source: Epirus Region Planning Portal<sup>35</sup>, accessed June 2026).

## 5.6.2 Boundaries of areas of the National System of Protected Areas according to Law 3937/2011

The designated areas of the European Ecological Network Natura 2000, as redefined by JMD 50743 (GG 4432/B/15-12-2017), are not located within areas encompassed by the project under examination.

Regarding the offshore project components, the nearest Natura 2000 sites to Exploration Well Asopus 1 are GR2230010 “Marine Area of the Diapontia Islands” and GR2230008 “Diapontia Islands: Othoni, Ereikousa, Mathraki and rocky islets”, both located approximately 41 km from the well location.

Regarding the Igoumenitsa shore base facilities, the nearest Natura 2000 sites are GR2120001 “Ekvoles (Delta) Kalama” and GR2120005 “Ygrotopos Ekvolon Kalama kai Nisos Prasoudi”, both located approximately 3.5 km from the facilities. Although these protected areas are in the wider area, the project footprint does not fall within their boundaries.

At approximately 7,500 m to the northeast lies the designated Natura 2000 site GR2120007 “STENA PARAKALAMOU”, while approximately 5,400 m to the southwest lies the designated Natura 2000 site

<sup>35</sup> [Περιφέρεια Ηπείρου - Region of Epirus](#)

GR2230004 “NISOI PAXOI KAI ANTIPAXOI KAI EVRYTERI THALASSIA PERIOCHI”. Owing to their distance from the project, these areas cannot be affected by the proposed development.

As shown in Figure 5-17, no part of the project falls within any protected area of the Natura 2000 network.

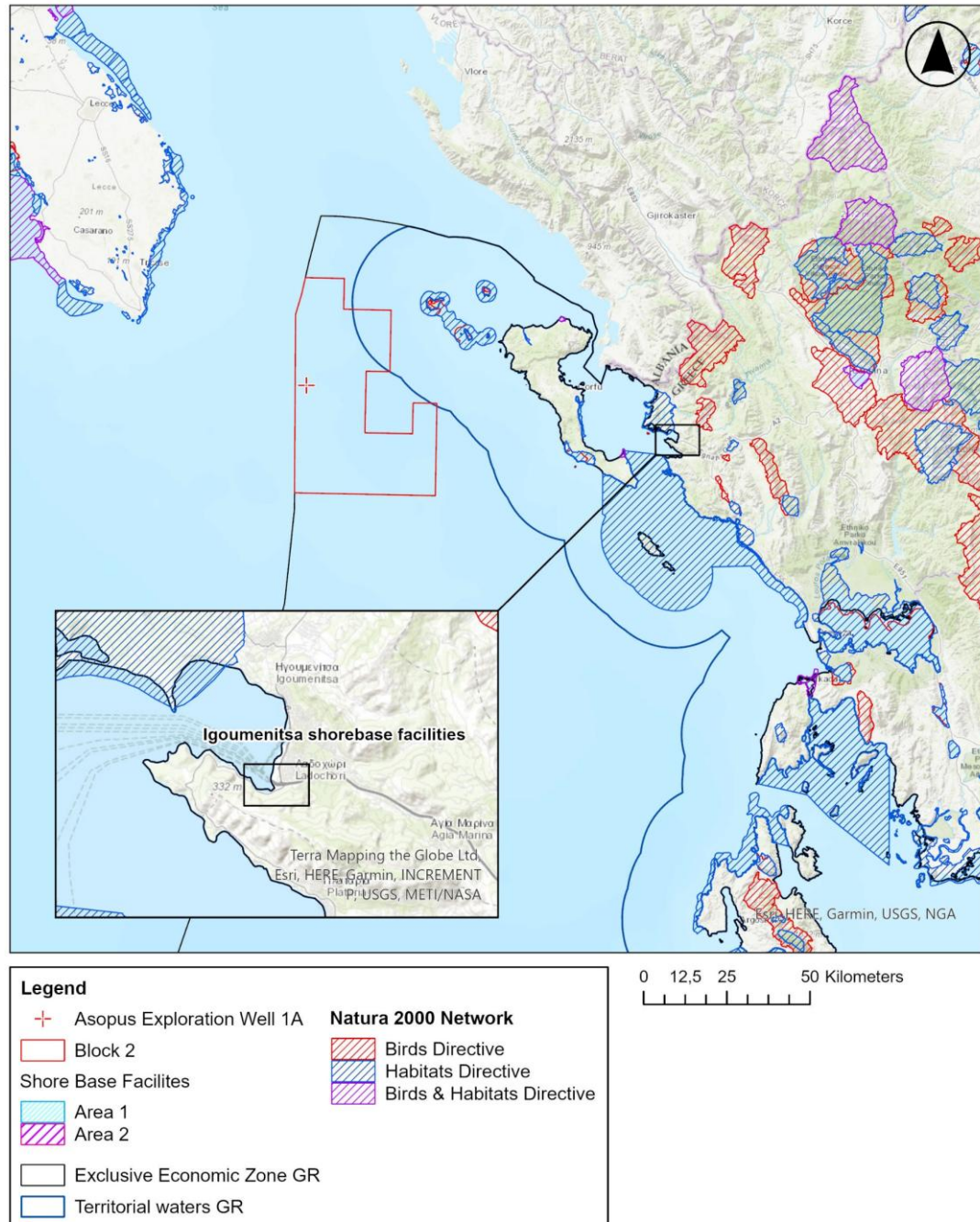


Figure 5-17: Protected Natura 2000 Network Areas in the wider project area

**Table 5-18: Distances from protected areas of Natura 2000 network**

| SITE CODE                                  | SITENAME                                                        | DESIGNATION | DISTANCE |
|--------------------------------------------|-----------------------------------------------------------------|-------------|----------|
| <b>From Exploration Well Asopus 1</b>      |                                                                 |             |          |
| GR2230010                                  | Marine Area of the Diapontia Islands                            | SAC         | ≈ 41 km  |
| GR2230008                                  | Diapontia Islands: Othoni, Ereikousa, Mathraki and rocky islets | SPA         | ≈ 41 km  |
| <b>From Igoumenitsa Onshore Facilities</b> |                                                                 |             |          |
| GR2120001                                  | Ekvoles (Delta) Kalama                                          | SCI         | ≈ 3.5 km |
| GR2120005                                  | Ygrotopos Ekvolon Kalama kai Nisos Prasoudi                     | SPA         | ≈ 3.5 km |
| GR2230004                                  | Nisi Paxi & Antipaxi kai euriteri thalassia periochi            | SCI / SAC   | ≈ 5.4 km |
| GR2120007                                  | Stena Parakalamou                                               | SPA         | ≈ 7.5 km |

All other protected natural areas are located more than 2 km from the project site. These include:

- the Kalamas River Biotope (AB3090039), approximately 3,950 m to the north;
- the CORINE site A00010031 “Kalamas (Thyamis) Estuary”, approximately 3,000 m to the northwest; and
- the Important Fish Habitat (TIFK) AT3011004 “Kalamas Estuary”, approximately 5,200 m to the northwest.

Similarly, because they are distant from the project, these protected areas cannot be affected by the proposed development.

Near the project site, there are also Wildlife Refuges, namely:

- “Vatatsa – Divari – Valtos Bay – Drepano, Municipality of Igoumenitsa” (Code K906, GG 951/B/10-07-2003, amendment), located approximately 1,860 m to the northeast; and
- “Varathi (Mavroudi – Nea Selefkeia – Igoumenitsa)” (Code K237, GG 561/23-04-1985), located approximately 3,070 m to the northwest.

### 5.6.3 Forests, forested areas and reforestation areas

The infrastructure of the Project is located entirely within the Municipal Unit of Igoumenitsa and not within the boundaries of the ratified and published forest map of Igoumenitsa (Initially Ratified Forest Map under Article 17 of Law 3889/2010 (as amended and in force), approved by GG 531/D/24 December 2018). More specifically it is located within the marine area and the officially designated Land Zone of the Port of Igoumenitsa in an area coded as *OO: Other category in the past - Other category today*. Consequently, it is not situated within forests, forest lands, or reforested areas.

The ratified forest maps for the wider study area of the project site have not yet been published but can be found on the official website of the Hellenic Cadaster. According to these maps, areas located to the northwest, south and east of the project site are classified as forests and forest lands as presented in the figure below.



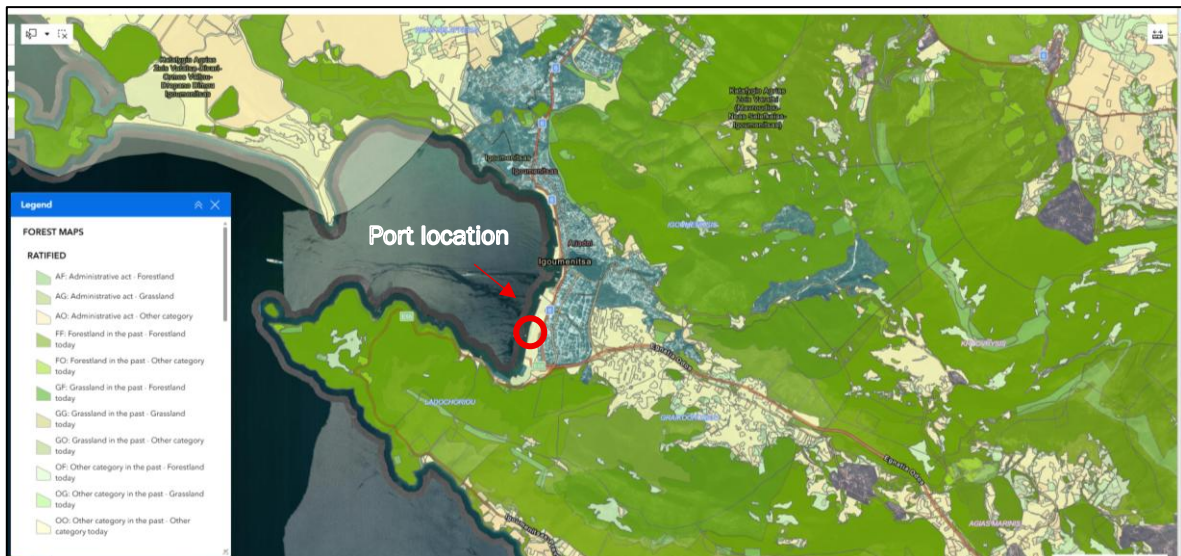


Figure 5-18: Published and ratified forest maps of the wider project area (Source: Hellenic Cadaster Forest Maps Portal<sup>36</sup>, accessed June 2026)

## 5.6.4 Social infrastructure and public utility facilities

### 5.6.4.1 Road network

A key feature of the land transportation network in the study area as it was first presented within the 2013 Study for the update of the Port of Igoumenitsa Masterplan, is the terminus of the Egnatia Motorway (yellow highlight in Figure 5-19 running in a west to east direction) at the southern edge of the city of Igoumenitsa, where the new port is located.

As previously mentioned, the Egnatia Motorway, a modern controlled-access highway, provides efficient and safe road connections between the area and Northern Greece, enabling short travel times and a high level of road safety.

Igoumenitsa is connected to the rest of Western Greece via the National Road, which terminates at the southern edge of the city.

The city's road network includes a principal transportation corridor, namely the coastal road (Agion Apostolon Street (purple highlight in Figure 5-19 running in a north to south direction), which further north is named Ethnikis Antistaseos Street). This road extends along the entire waterfront from the new port to the location of the proposed seaplane base (water aerodrome).

This main road corridor connects to the Preveza–Igoumenitsa National Road and the Egnatia Motorway to the south, as well as to the old Igoumenitsa–Ioannina National Road to the north.

A network of smaller local roads provides access to the individual districts and neighborhoods of the city.

<sup>36</sup> [EN | Ψηφιακός Χάρτης Κτηματολογίου](#)

#### 5.6.4.2 Air connections





Igoumenitsa is also served by Corfu Airport, through the regular ferry connection between Corfu and Igoumenitsa.

#### 5.6.4.3 Sewerage networks

The city of Igoumenitsa is served by a sewerage network. Wastewater is conveyed to the Wastewater Treatment Plant (WWTP) of Igoumenitsa (EL212001012), located at the western end of the Liotrivia peninsula (Figure 5-20), where it undergoes secondary treatment.

The Wastewater Treatment Plant of Igoumenitsa operates under the approved Environmental Terms (AEPO) of the municipal sewerage and wastewater treatment system, published in the GG in accordance with Law 4014/2011 and is the closest treatment plant to the Port of Igoumenitsa.

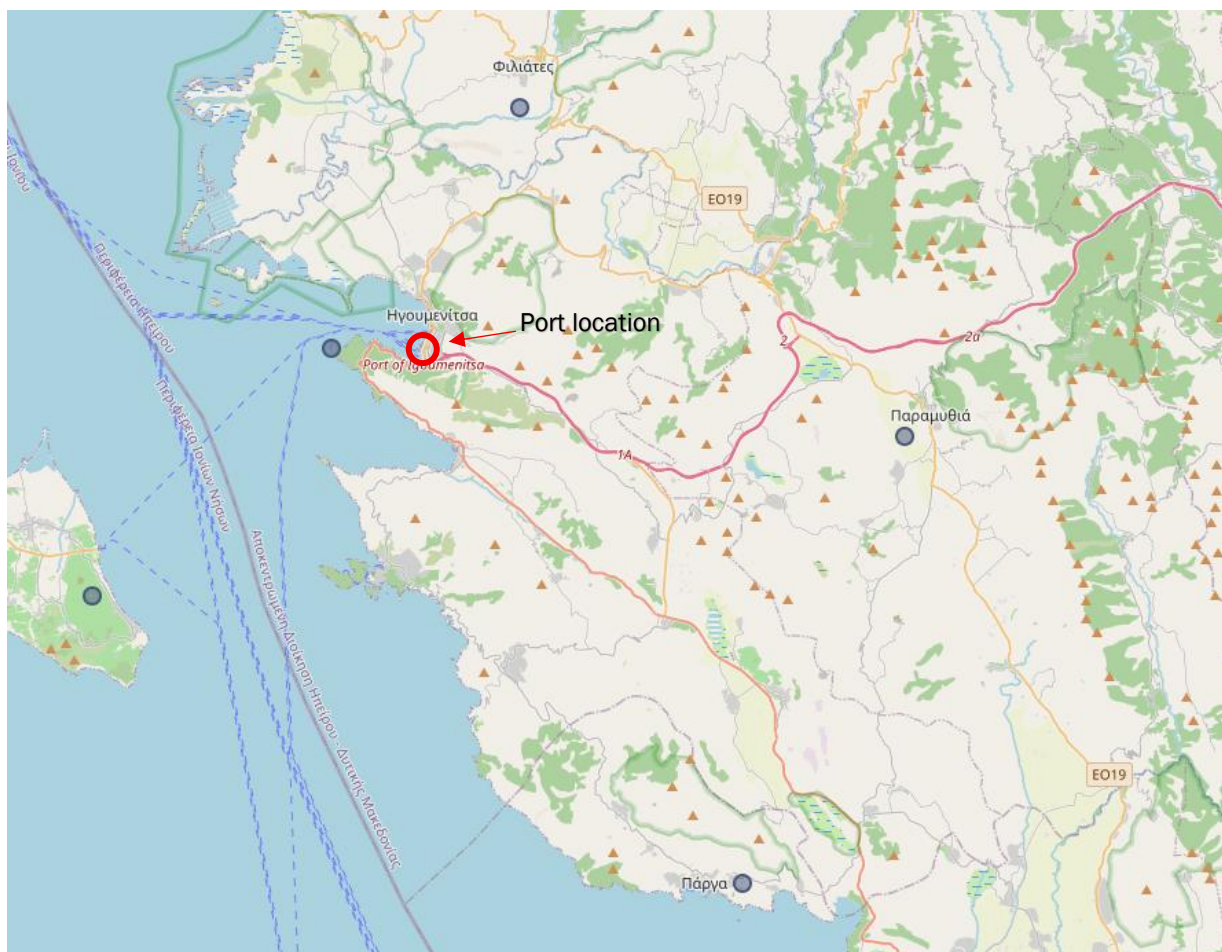


Figure 5-20: Wastewater Treatment Plants (WWTP) in the wider study area (Source: Special Secretariat for Water, Wastewater Treatment Plants Operation Monitoring Database<sup>37</sup>, accessed June 2026)

In the wider study area, the following wastewater treatment plants are located and operational (see the following table), which comply with the limits of Directive 91/271/EEC.

<sup>37</sup> [Wastewater Treatment Plants - Wastewater Treatment Plants Monitoring Database](#)

**Table 5-19: Wastewater Treatment Plants (WWTP) near the study area**

| NAME OF WWTP      | WWTP CODE     | TYPE OF TREATMENT                                               | TOTAL INCOMING FLOW TO THE WASTEWATER TREATMENT PLANT (WWTP) (M <sup>3</sup> /DAY) | RECEIVER       |
|-------------------|---------------|-----------------------------------------------------------------|------------------------------------------------------------------------------------|----------------|
| <b>FILIATES</b>   | EL212008018   | More stringent disinfection                                     | 968                                                                                | EL212008018    |
| <b>PARAMYHTIA</b> | EL21220040114 | More stringent nitrogen removal and disinfection                | -                                                                                  | EL212200401140 |
| <b>PARGA</b>      | EL214006016   | More stringent nitrogen and phosphorus removal and disinfection | 6,050                                                                              | EL2140060160   |

(Source: Special Secretariat for Water, Wastewater Treatment Plants Operation Monitoring Database accessed June 2026)

Regarding municipal solid waste management, waste collection is carried out by the services of the Municipality of Igoumenitsa, while final disposal takes place at the Igoumenitsa Sanitary Landfill for Residual Waste (XYTY Ηγουμενίτσας).

#### 5.6.4.4 Utility networks

The city of Igoumenitsa is served by the national electricity distribution network operated by the Hellenic Electricity Distribution Network Operator (HEDNO). Fixed-line telecommunications services are provided through the network of the Hellenic Telecommunications Organization (OTE), while the area is also covered by mobile telecommunications services.

Potable water is supplied through the municipal water distribution system. Water supply services are provided by the Municipal Water Supply and Sewerage Company of Igoumenitsa.

According to the National Registry of Water Abstraction Points (EMZY), in the immediate area of the Project's land facilities, a number of water abstraction points are identified as shown in Figure 5-21.



Figure 5-21: Water abstraction points near the Port of Igoumenitsa (Source: National Registry of Water Abstraction Points (EMSY)<sup>38</sup>, accessed June 2026).

## 5.6.5 Sites of archaeological interest

### 5.6.5.1 Underwater cultural heritage

Underwater and marine cultural heritage resources are protected under the same consolidated legislative framework as terrestrial heritage through L. 4858/2021 (GG A' 220/19.11.2021), which codified prior provisions, including those specifically addressing underwater antiquities. Under this framework, all ancient shipwrecks, submerged settlements, ancient harbours and port constructions, and artefacts of all kinds discovered in the sea, lakes or rivers are considered part of the Hellenic underwater cultural heritage and are the property of the Greek State.

The Law defines cultural goods as material evidence of human existence and activity, and distinguishes between ancient monuments, modern monuments, immovable monuments, movable monuments, archaeological sites, historical places and intangible cultural heritage.

Protection under Law 4858/2021 includes identification, research, recording, documentation, conservation, prevention of damage or alteration, prevention of illegal excavation and export, and promotion of public

<sup>38</sup> [Θέση σημείων υδροληψίας](#)

awareness. The protection of monuments, archaeological sites and historical places must also be considered in spatial, development, environmental and urban planning.

For underwater cultural heritage, the Law is particularly relevant because it expressly covers monuments and archaeological sites located on the seabed, in lakes and in rivers. It regulates underwater archaeological sites, shipwrecks, submerged remains and related activities such as diving, photography, archaeological investigation and seabed works. Shipwrecks more than 50 years old are subject to specific protection provisions, while any intervention, removal, movement or alteration of objects from wrecks or the surrounding seabed is prohibited without the required authorization.

Responsibility for the protection, management and archaeological investigation of underwater cultural heritage rests with the Ephorate of Underwater Antiquities (EUA), which constitutes the competent authority for the assessment and management of submerged archaeological resources.

The Project is considered compatible with Law 4858/2021 as it is not expected to cause direct or indirect damage, disturbance, alteration or removal of known or unknown underwater cultural heritage resources.

### 5.6.5.2 Onshore sites of archaeological interest

The main archaeological sites in the Regional Unit of Thesprotia within a 10km radius from the Port of Igoumenitsa are briefly described in Table 5-20 below:

**Table 5-20: Archaeological sites in the Regional Unit of Thesprotia within a 10 km radius from the Port of Igoumenitsa**

| DESCRIPTION                                                                                                                                | TYPE OF PROTECTION                                                                                                       | PROTECTION STATUS                                                                                                                                                                                                 | DISTANCE FROM THE PORT OF IGOUMENITSA |
|--------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| <b>FORTRESS OF IGOUMENITSA</b>                                                                                                             |                                                                                                                          |                                                                                                                                                                                                                   |                                       |
| The Castle (Fortress) of Igoumenitsa is located on a low hill above the modern city and dates back to the period of the end of Roman rule. | Type of protection by the Ministry of Culture: Listing<br><br>Competent Authority: Ephorate of Antiquities of Thesprotia | Decision of the Ministry of Culture and Sports (ΥΠΠΟΑ/ΓΔΑΠΚ/ΔΒΜΑ/ΤΒΜΑΧ ΜΑΕ/307049/220237/4109/1654) regarding archaeological conditions and approval for the implementation of the project, GG 159/AAP/2018-07-31 | ~0.50 km N                            |
| <b>ACROPOLIS OF FASKOMILIA</b>                                                                                                             |                                                                                                                          |                                                                                                                                                                                                                   |                                       |
| Ruins of an ancient settlement and an isodomic wall of the 4th century BC.                                                                 | Type of protection by the Ministry of Culture: Listing<br><br>Competent Authority: Ephorate of Antiquities of Thesprotia | GG 35/B/1962-02-02<br><br>Ministerial Decision 15794,                                                                                                                                                             | ~ 6 km SE                             |
| <b>LYGIA AND LIUBETSI</b>                                                                                                                  |                                                                                                                          |                                                                                                                                                                                                                   |                                       |



| DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | TYPE OF PROTECTION                                                                                                              | PROTECTION STATUS                                                                                                                                                                                                                                                                 | DISTANCE FROM THE PORT OF IGOUMENITSA |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| <p>The settlement consists of three successive fortified sections (Castles A, B and C) with strong isodomic fortifications of the 5th and early 4th century BC. Parts of them were probably repaired or reconstructed during the late Classical, Hellenistic and Roman periods.</p> <p>In the wider area of the ancient settlement of Lygia there is a number of sites with antiquities which are probably also connected to Corfiot Perea, being parts of the same settlement.</p> | <p>Type of protection by the Ministry of Culture: Listing</p> <p>Competent Authority: Ephorate of Antiquities of Thesprotia</p> | <p>Ministerial Decision of the Ministry of Culture and Tourism (Ref. ΥΠΠΟΤ/ΓΔΑΠΚ/ΑΡΧ/Α1/Φ32/6 1508/2776)</p> <p>GG 221/AAP/29-08-2011</p>                                                                                                                                         | ~ 5 km NW                             |
| <b>DOLIANI, PARAPOTAMOS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                 |                                                                                                                                                                                                                                                                                   |                                       |
| <p>Scattered archaeological remains that cover a wide range of time and bear witness to the continuous habitation of the area from antiquity to post-Byzantine (Ottoman) times stand at the top of the hill of Doli ani, in a beautiful natural landscape surrounded by the river Kalamas.</p>                                                                                                                                                                                      | <p>Type of protection by the Ministry of Culture: Listing</p> <p>Competent Authority: Ephorate of Antiquities of Thesprotia</p> | <p>Ministerial Decision 15794, Ministerial Decision of the Ministry of Culture and Tourism (Ref. ΥΠΠΟΤ/ΓΔΑΠΚ/ΑΡΧ/Α1/Φ43/4 2230/2132),</p> <p>GG 224/AAP/15-06-2012</p>                                                                                                            | ~ 9 km ENE                            |
| <b>GITANA, FILIATES</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                 |                                                                                                                                                                                                                                                                                   |                                       |
| <p>The ancient city of Gitani, from its foundation in 335/330 BC until its destruction by the Romans in 167 BC, was one of the most important political, administrative and economic centers of the country of Thesprotians.</p>                                                                                                                                                                                                                                                    | <p>Type of protection by the Ministry of Culture: Listing</p> <p>Competent Authority: Ephorate of Antiquities of Thesprotia</p> | <p>GG 35/B/1962-02-02, Ministerial Decision 15794, Ministerial Decision ΥΠ.ΠΟ.Α/ΓΔΑΠΚ/ΔΙΠΚΑ/ΤΑΧ/Φ 32/113260/5837/5/7757/3 742 (17 July 2013), concerning the designation and delimitation of the Gitana Archaeological Site, Thesprotia, Greece,</p> <p>GG 274/AAP/31-07-2013</p> | ~ 8,5 km N                            |
| <b>GITANA CEMETERY</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                 |                                                                                                                                                                                                                                                                                   |                                       |
| <p>Near the archaeological site and the modern dam of Kalamas, part of the Cemetery of Gitana has been found, with the most characteristic find being a cist tomb.</p>                                                                                                                                                                                                                                                                                                              | <p>Type of protection by the Ministry of Culture: Listing</p> <p>Competent Authority: Ephorate of Antiquities of Thesprotia</p> | <p>GG 35/B/1962-02-02, Ministerial Decision 15794,</p>                                                                                                                                                                                                                            | ~ 9 km N                              |

(Source: Archaeological Cadaster <sup>39</sup>, June 2026)

<sup>39</sup> [Archaeological Cadaster](#)

Within a radius of 10 km from the study area, the following ancient monuments are also identified (the relevant distances are presented in the following table):

**Table 5-21: Ancient monuments in the Regional Unit of Thesprotia within a 10 km radius from the Port of Igoumenitsa**

| MONUMENT - TEMPLE                                          | DISTANCE FROM THE PORT OF IGOUMENITSA (APPROXIMATE DISTANCE FROM THE CENTRE OF THE PORT) | WITHIN THE STUDY AREA |
|------------------------------------------------------------|------------------------------------------------------------------------------------------|-----------------------|
| Fortress of Igoumenitsa, Thesprotia                        | 1km NNW                                                                                  | No                    |
| Windmill, Graikochori                                      | 2km ESE                                                                                  | No                    |
| Holy Monastery of Zoodochos Pigi, Agionisi                 | 4km W                                                                                    | No                    |
| Vasiliki, Islet of Prasoudi                                | 9km W                                                                                    | No                    |
| Pyrgos (Koulia) Ragiou                                     | 7km NW                                                                                   | No                    |
| Holy Monastery of the Assumption of the Virgin Mary, Ragio | 10km N                                                                                   | No                    |
| Ancient Theatre of Gitanoi                                 | 9km N                                                                                    | No                    |

(Source: Archaeological Cadaster, June 2026)

The traditional settlement of Kamitsani, is a residential complex of historical, urban planning, architectural, folkloric, social, and aesthetic character, developed from the 16th to the 19th century. The settlement has been designated as Traditional in the Prefecture of Thesprotia, pursuant to Presidential Decree 19-10-1978 (GG 594/D/13.11.1978).

The project under study is not expected to cause any damage to the protected monuments of the archaeological site, as they are located at a significant distance from the proposed intervention areas. Furthermore, it should be noted that the interventions related to the Project will be of short duration and will concern a limited area of the wider Port of Igoumenitsa.

In any case, to ensure the protection of the cultural environment of the study area in accordance with the requirements of Law 3028/2002, as amended and currently in force, as detailed in Chapter 12, the proposed interventions will be carried out under the supervision of the competent archaeological authorities following timely and written notification prior to the commencement of works, which is the responsibility of the project operator.

## 5.7 Applicable spatial and urban planning regulations in the project area

This section presents the key spatial planning policies that have been established at the level of Strategic Spatial Planning for the study area in accordance with Law 4447/2016. Subsequently, Law 4759/2020 is Greece's core spatial planning reform law that modernized and reorganized the entire planning system, establishing a clearer hierarchy of national, regional, and local plans and strengthening sector frameworks like ports, energy, and urban development. and examines the compatibility of the proposed project with these policies.



## 5.7.1 Provisions and Guidelines of the General and Regional Frameworks for Spatial Planning and Sustainable Development

### 5.7.1.1 General Framework for Spatial Planning and Sustainable Development (GFSPSD)

The applicable General Framework for Spatial Planning and Sustainable Development (GFSPSD), approved by *Decision 6876/4871/2008* of the Parliament (GG 128/A/03-07-2008), in accordance with *Article 12(3) of Law 4447/2016*, as in force, serves as the National Spatial Strategy. It includes a set of texts and plans that record and assess the factors affecting the long-term spatial development and structure of the national territory, evaluate the spatial impacts of international, European, and national policies, and determine, with a 15-year outlook, the key priorities and strategic directions for integrated spatial development and sustainable organization of national space.

More specifically, in view of the acute problems caused by rapidly progressing climate change, the following goals are set:

- Ongoing efforts for energy conservation
- Promotion of environmentally friendly alternative energy sources, especially renewable energy sources
- Enhancement of natural feedback mechanisms (forests, wetlands, etc.)
- Adaptation of the country to the new conditions brought about by climate change and addressing their consequences (wildfires, floods and erosion, drought, salinization, desertification, and other natural phenomena), through the creation of appropriate preventive mechanisms, infrastructure, and action plans.

Regarding the spatial organization and development of the industrial sector (mining – manufacturing), according to Article 7, Section C of the GFSPSD, the following key goals and objectives are set:

- Promotion of a polycentric spatial organization model for industry in order to enhance its contribution to regional development and the exploitation of the comparative advantages of various areas.
- Resolution of land-use conflicts and ensuring conditions for the coexistence of activities, considering the uniqueness and availability of resources for the development of each productive activity and weighing social-economic and environmental costs/benefits.
- Enhancement of competitiveness and entrepreneurship in the industrial sector through appropriate spatial regulations, focusing on activities that meet local needs and have a comparative advantage in international markets.
- Improvement and coordination of the institutional provisions of individual spatial policies, to more effectively promote entrepreneurship and ensure transparency and legal certainty in the siting of industrial activities.
- Integration of the environmental dimension into industrial activities through the application of modern exploitation and production techniques, as well as anti-pollution and environmental restoration technologies.

According to Article 10 of the GFSPSD, in relation to climate change mitigation, in addition to measures for the protection of water, soil, and air, the following are also promoted:

- Plans for the use of renewable energy sources.

- Promotion of less energy-intensive transport modes.
- Infrastructure for the widespread use of natural gas (especially in electricity production).
- Obligatory reduction of pollutant gas emissions contributing to the greenhouse effect by industries.
- Application of best available techniques in industries.
- Energy saving measures.
- Forest fire prevention measures and reforestation.
- Applications of bioclimatic architecture, etc.
- Strengthening of natural feedback mechanisms (forests, wetlands, etc.) and their biodiversity.

The project does not conflict with the broader goals established by GFSPSD.

### 5.7.1.2 Regional Spatial Framework of the Region of Epirus

The Regional Spatial Framework (RSF) of the Region of Epirus<sup>40</sup> replaces the previous Regional Framework for Spatial Planning and Sustainable Development of the same region approved by Ministerial Decision 25301/2003, “Approval of the Regional Framework for Spatial Planning and Sustainable Development of the Region of Epirus” (GG B’ 1451/2003).

Administratively, the area falls under the jurisdiction of the Municipality of Igoumenitsa, within the Regional Unit of Thesprotia, Region of Epirus. The cities of Arta, Igoumenitsa and Preveza are the administrative capitals of the Regional Units of Arta, Thesprotia and Preveza, respectively, and together with Ioannina constitute the principal urban centers of the Region.

These urban centers provide services of both local and supra-local (regional) significance throughout their respective Regional Units.

The recently approved Revised Regional Spatial Framework of the Region of Epirus, adopted by *Ministerial Decision ΥΠΕΝ/ΔΧΩΠΣ/78523/1208* and published in GG 286 ΑΑΠ/28-11-2018, provides policy directions concerning Igoumenitsa that are closely linked to its port. These include:

- Development opportunities related to transit trade, maritime transport, and tourism.
- Promotion of outward-oriented cooperation with Southern Albania, the Ionian region, and the Adriatic region.

<sup>40</sup> [https://ypen.gov.gr/wp-content/uploads/2020/11/20200728\\_Hpeiros\\_FEK.pdf](https://ypen.gov.gr/wp-content/uploads/2020/11/20200728_Hpeiros_FEK.pdf)

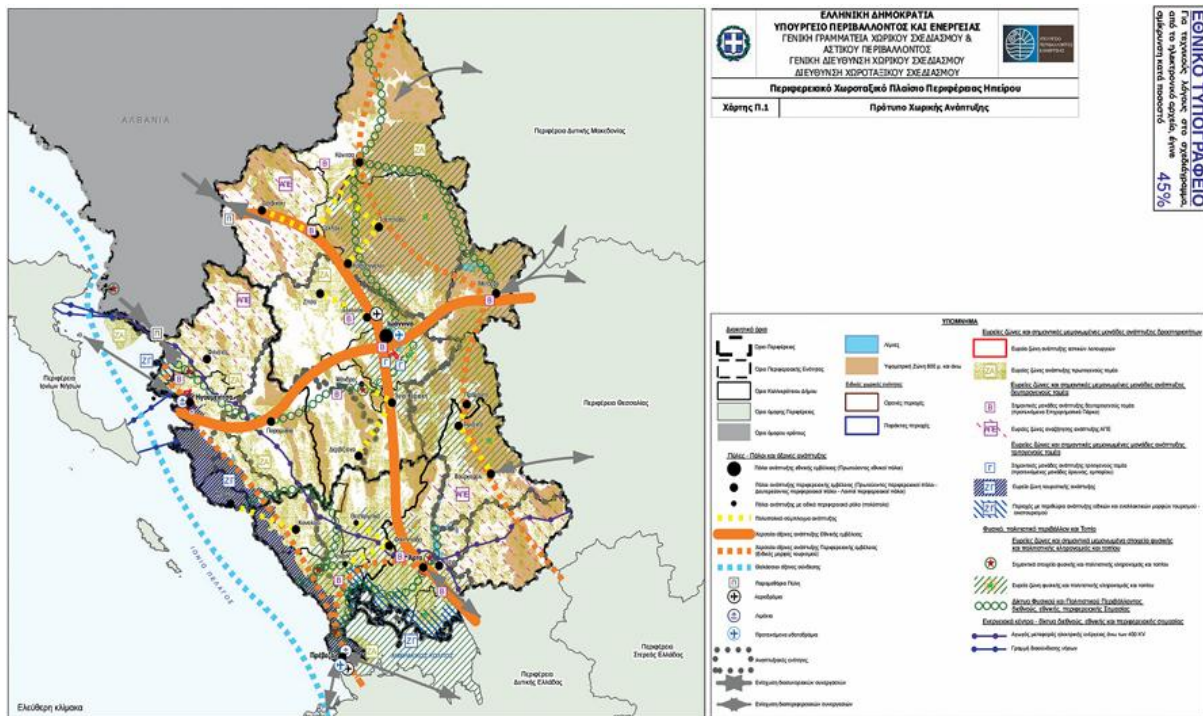


Figure 5-22: Spatial Development Model of the Region of Epirus (Source: Map Π-1 of the Regional Spatial Framework of the Region of Epirus, 2018).

The area is considered suitable for the development of freight and transit / logistics activities, in combination with the Port of Igoumenitsa.

Furthermore, the completion of the port works as described within the Igoumenitsa Port masterplan (2013), should ensure the port's ability to assume alternative future roles, including:

- a cruise port,
- a ship bunkering port,
- a commercial freight port,
- a support port for activities associated with hydrocarbon exploration and exploitation in Epirus and the Northern Ionian Sea

The Regional Spatial Framework of Epirus (GG 286/ΑΑΠ/28.11.2018) identifies the Port of Igoumenitsa as the principal international maritime gateway of Western Greece and a strategic development pole for the Region.

The Framework establishes the wider key planning directions, heavily involving the Port of Igoumenitsa as per the list of objectives below:

## 1. International Gateway and Transport Hub

- Recognition of Igoumenitsa as a major gateway connecting Greece with Italy and Western Europe.
- Strengthening of the port's role through completion of strategic transport infrastructure, including the E65 Motorway, the Western Axis, railway connections and the upgrading of Ioannina Airport.
- Reinforcement of the port's integration with the Egnatia Motorway corridor.

## 2. Logistics and Freight Development

- Promotion of freight, logistics and transshipment activities associated with the port.
- Identification of Igoumenitsa as a potential logistics hub serving Epirus, Thessaly, Southern Albania and the wider Adriatic region.
- Support for the development of freight and intermodal transport infrastructure.

### **3. Cross-Border and Adriatic Cooperation**

- Promotion of economic and transport links with Southern Albania.
- Support for cross-border cooperation within the Adriatic-Ionian area.
- Priority for the coastal connection between Igoumenitsa and Mavromati.

### **4. Port Diversification**

The Framework requires that future port development maintain the flexibility to support:

- passenger ferry traffic,
- freight transport,
- cruise tourism,
- ship bunkering services,
- and support activities related to hydrocarbon exploration and production in the Northern Ionian and Epirus regions.

### **5. Tourism Development**

- Recognition of the wider coastal zone (Parga–Perdika–Syvota–Plataria–Igoumenitsa) as the most dynamic tourism area of Epirus.
- Strengthening of Igoumenitsa's role as a tourism gateway and cruise destination.
- Integration of the coastal tourism market with the wider Southern Adriatic tourism region.

### **6. Maritime Tourism Infrastructure**

The Framework specifically proposes:

- a marina in the Igoumenitsa area,
- anchorage facilities in the Perdika–Syvota area,
- integration of Igoumenitsa into the Ionian yachting network alongside Corfu, Paxi and Lefkada.
- development of cruise-support infrastructure at the Port of Igoumenitsa.

### **7. Coastal Zone Management**

- Protection and rational management of coastal land uses.
- Restriction of uncontrolled out-of-plan development.
- Control of competing land uses in the coastal zone.
- Promotion of sustainable tourism development and stronger links between tourism and the primary sector.

As such, at the regional strategic planning level, the support base for the hydrocarbon exploration Project under assessment is consistent with the adopted spatial strategy for the Region of Epirus, and specifically with the city of Igoumenitsa and its port.

## 5.7.2 Special Spatial Planning and Sustainable Development Frameworks

This section examines the compatibility of the project with the provisions and guidelines of the following Special Spatial Planning and Sustainable Development Frameworks (SSPSDFs) that have been institutionalized to date and may be related to the activities and facilities of the project under assessment:

- SSPSDF for Renewable Energy Sources (JMD 49828/2008, GG 2464/B/2008), (currently under revision).
- SSPSDF for Industry (JMD 11508/2009, GG 151/AAP/2009).
- SSPSDF for Aquaculture (JMD 31722/2011, GG 2505/B/2011).

### 5.7.2.1 Special Spatial Planning and Sustainable Development Framework for Renewable Energy Sources (RES)

The Special Spatial Planning and Sustainable Development Framework for Renewable Energy Sources (SSPSDF-RES), approved by JMD 49828/2008 (GG 2464/B/2008), concerns the comprehensive spatial planning of all categories of RES projects throughout Greece. According to Article 1, the minimum goal of the SSPSDF-RES is to achieve Greece's contractual targets for addressing climate change and promoting RES, as derived from its European and international obligations.

According to the Special Framework for Spatial Planning and Sustainable Development for Renewable Energy Sources (RES), JMD 49828/2008 (GG 2464 B/3-12-2008), the area under examination is **not** located within Wind Energy Priority Areas (P.A.P.) or Wind Energy Suitability Areas (P.A.K.).

In the Region of Epirus, no areas of major importance have been designated for the siting of wind energy installations and hydroelectric projects aimed at exploiting wind and hydropower potential. Furthermore, no specific zones for other Renewable Energy Sources (solar energy, biomass, and biogas) have been identified in the immediate area proposed for the project.

Therefore, according to the Special Spatial Planning Framework for Renewable Energy Sources, no specific spatial planning directives or restrictions apply to the immediate area in which the proposed project is to be located.

It is noted that the SSPSDF-RES is currently under revision, with no definitive approval date available at this time.

The project under assessment is not directly related to this framework, as it does not concern a RES project. However, it is worth noting that since it will temporarily form part of the wider Port of Igoumenitsa, it is not expected to negatively impact its provisions or planning in any way.

### 5.7.2.2 Special Spatial Planning and Sustainable Development Framework for Aquaculture

The SSPSDF for Aquaculture (SSPSDF–Aqua), issued by GG 2505/B/2011, addresses the categorization of four specific aquaculture sectors:

- Marine aquaculture (excluding shellfish farming).
- Shellfish farming.
- Freshwater aquaculture.
- Aquaculture of aquatic organisms in natural brackish ecosystems.

The SSPSDF–Aqua defines the spatial planning framework at two levels:

- Spatial allocation and planning of aquaculture units in the marine area.
- Spatial allocation and planning of the main production activities, associated, and supporting facilities in the terrestrial area.

The framework identifies and categorizes suitable areas for aquaculture development (referred to as Areas of Aquaculture Development – AAD) / Π.Α.Υ., based on their characteristics and the current level of aquaculture activity. These areas reflect the suitability for aquaculture development. From a spatial planning perspective, they represent broader search zones for hosting areas (Organized Aquaculture Development Areas – OADA / Π.Ο.Α.Υ. or Informal Unit Clusters – IUC / Π.Α.Σ.Μ.) and individual units.

These areas are classified into five (5) categories:

- Highly developed areas requiring improvements, infrastructure modernization, and environmental protection and enhancement.
- Areas with significant potential for further development of marine aquaculture.
- Remote areas with high potential for marine aquaculture development.
- Environmentally sensitive areas where installation and operation conditions must be adapted to the specific environmental characteristics.
- Spot-location areas.

The standard model for marine aquaculture unit placement includes the installation of units within Areas of Aquaculture Development (AAD) and the establishment of individual units.

Specifically, units may be installed:

- Within AADs:
- In Organized Aquaculture Development Areas (OADA), as defined in Article 10 of Law 2742/1999 (as currently in force).
- In Informal Unit Clusters (IUC), which represent a transitional phase toward organized OADAs.
- Individually.
- At individual sites, within or outside AADs, subject to specific criteria

According to the Aquaculture Spatial Planning Framework (GG 2505/B/04.11.2011), within the Regional Unit of Thesprotia, there is one of the particularly developed Aquaculture Development Areas (A.D.A.), namely



Area A.1: Sagiada–Kalamas–Valtos Ragiou, with its main aquaculture activity being represented by Fish farming – Shellfish farming – Other aquatic organisms.

This area included the recommended following zones to form Organized Aquaculture Development Areas – Π.Ο.Α.Υ.): Sagiada Coastal Strip, Valtos Bay, Akra Gonia, Kalamas I, and Kalamas II.

In addition, the aforementioned Aquaculture Development Area includes a fish seed production facility (hatchery), while two packaging and production facilities for unprocessed fishery products are located in its vicinity.

According to the *2nd Revision of the River Basin Management Plans for the Epirus River Basin District (EL05)*<sup>41</sup>, the study area lies within the Kalamás River Basin (EL0512). In this area, there are currently thirty-nine (39) operating aquaculture units, of which twenty-six (26) cultivate marine species, while the remaining thirteen (13) are engaged in freshwater aquaculture.

Furthermore, as part of the conditions for the approval of new aquaculture facilities, the management plans<sup>42</sup> establish measure M05B0704 and link the National Maritime Spatial Strategy (NMSS) with the implementation of measures concerning commercially important fish stocks, specifically *Measure 3.4.8: “Development of a unified Maritime Spatial Planning framework with provisions for fisheries and aquaculture,”* as well as measures aimed at mitigating eutrophication, namely *Measure 5.4.2: “Design and implementation of good operational practices and monitoring in aquaculture installations.”*

Given its limited operational capacity and the fact that the supply base under consideration will form part of the wider Port of Igoumenitsa that has already obtained environmental permitting, it is not expected to further affect the uses of the AAD. Therefore, the project is considered compatible with the SSPSDF for Aquaculture.

### 5.7.2.3 Special Spatial Planning and Sustainable Development Framework for Industry

The *Special Framework for Spatial Planning and Sustainable Development for Industry* (Decision 11508/18.02.2009 of the Committee for the Coordination of Government Policy in the field of Spatial Planning and Sustainable Development, GG 151/AAP/2009) provides the strategic framework and guidelines for industrial development in Greece (Figure 5-23).

<sup>41</sup> [https://wfdver.ypeka.gr/wp-content/uploads/2026/04/%CE%95L05\\_2REV\\_PIESEIS.pdf](https://wfdver.ypeka.gr/wp-content/uploads/2026/04/%CE%95L05_2REV_PIESEIS.pdf)

<sup>42</sup> [https://wfdver.ypeka.gr/wp-content/uploads/2026/04/EL05\\_2REV\\_Programma\\_Metrwn.pdf](https://wfdver.ypeka.gr/wp-content/uploads/2026/04/EL05_2REV_Programma_Metrwn.pdf)

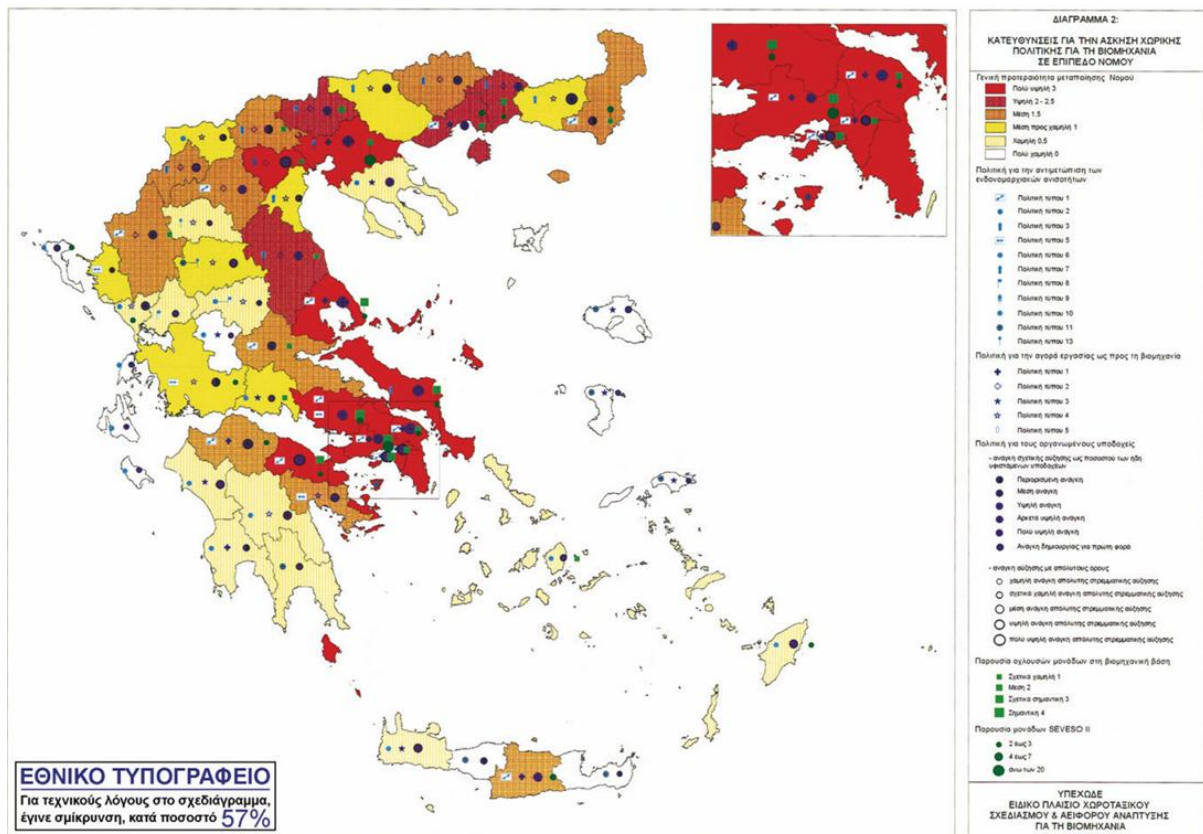


Figure 5-23: Guidelines for spatial policy implementation for industry at the prefectural level (Source: Map 2 of the Special Spatial Framework for Industry, 2009)

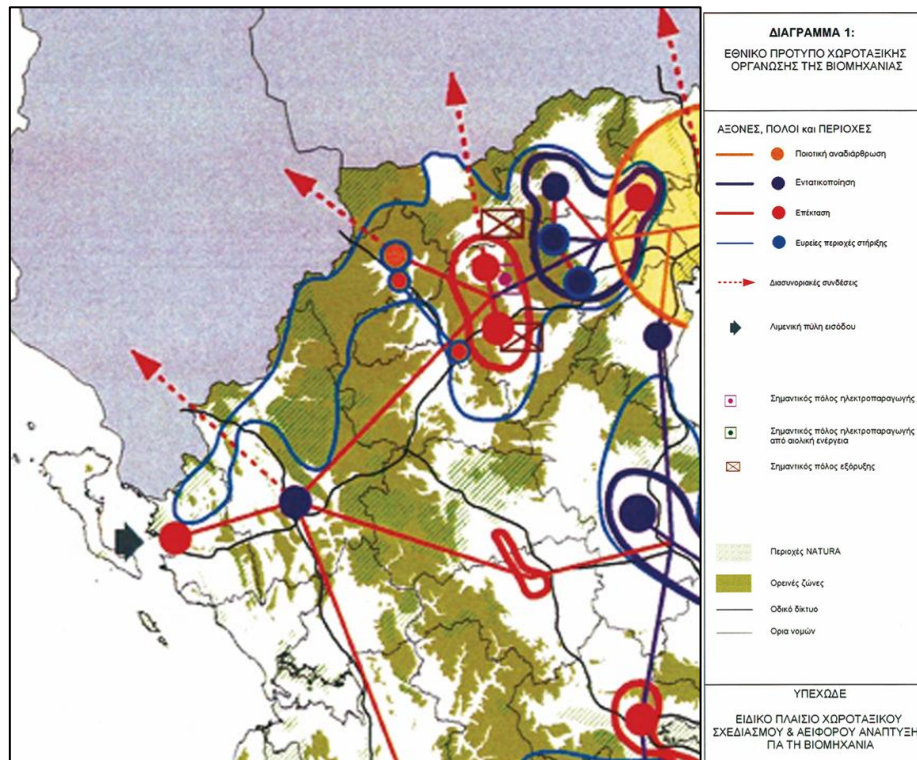
According to the Special Framework for Industry, Igoumenitsa forms part of the areas where industry can play a particularly important role, complementary to other local characteristics, due to its position as one of the country's principal international gateways and as a hub for intermodal transport and major infrastructure networks (Figure 5-24).

The specific directions provided for the Regional Unit of Thesprotia are as follows:

- **General priority for spatial policy regarding manufacturing:** Medium (1.0), primarily as a strategic development option associated with the emerging role of Igoumenitsa.
- **Sectoral priorities:** At present, there is no clearly defined industrial profile. To capitalize on future opportunities, the preparation of a dedicated development plan will be required, based on the range of activities attracted by the area's high accessibility. With regard to manufacturing, prospects relate to sectors that benefit from supra-local accessibility and therefore involve enterprises of a certain scale and outward orientation, as well as activities that complement trade and logistics services.
- **Spatial pattern of industrial development:** Manufacturing activities are concentrated within the Igoumenitsa–Paramythia–Filiates area; however, due to their relatively limited scale, they do not currently constitute a genuine industrial concentration zone. Ongoing improvements in transport infrastructure are creating new comparative advantages, significantly strengthening the role of Igoumenitsa and encouraging development towards the east. The establishment of a free trade zone in connection with the Port of Igoumenitsa also represents a potential future development opportunity.
- **Planned industrial location:** The recently established Industrial and Business Park (BIO.PA.) should be

further supported through appropriate urban planning measures.

- **Land uses and relationship with other activities:** The increasing tourism specialization of the Regional Unit, which functions as a coherent tourism area, means that any future expansion of the industrial base could potentially generate land-use conflicts. Nevertheless, tourism development is expected to remain primarily focused on the coastal zone, whereas industrial development does not prioritize coastal locations.
- For areas characterized by a particularly limited industrial presence, a Type 5 policy approach is recommended, aimed at addressing internal development disparities within the Regional Unit and supporting balanced territorial development.



**Figure 5-24: National Spatial Organization of Industry (Source: *National Spatial Planning and Sustainable Development Framework for the Industrial Sector*)**

The Industrial Park (VIOPA) of Thesprotia was initially defined and spatially delimited with *JMD 14721/809*, covering an area of approximately 230,000 m<sup>2</sup> (23 hectares), within the administrative boundaries of the Municipality of Paramythia, Regional Unit of Thesprotia, Greece.

The BIO.PA, currently falls within the Kastri Municipal District (former administrative unit), a settlement and former municipal district within the Regional Unit of Thesprotia, Epirus Region, Greece. Following the implementation of the “Kallikratis” reform (Law 3852/2010), it was incorporated into the Municipality of Igoumenitsa.

The designated area was intended for the installation, relocation, and operation of industrial and craft enterprises, as defined under Article 2 of Law 2545/1997 (GG 254/A/1997) concerning the development of organized industrial and business areas.

The establishment of the BIO.PA (ΒΙΟ.ΠΑ) aimed to concentrate productive activities in a structured and regulated spatial framework, ensuring orderly industrial development, improved infrastructure provision, and compliance with applicable environmental and planning regulations.

The Decision also approved the establishment of the BEPE (ΒΕΠΕ) development entity and the accompanying Environmental Impact Assessment (EIA) study for the project, in accordance with the provisions of Law 2545/1997 on Industrial and Business Areas.

Ministerial Decision A/7.7/4487/320/2003 (GG 657/B/06.05.2004), later approved the Operational Regulation of the Thesprotia Industrial Park (VIOPA). The Regulation established the operational framework governing land use, conditions for the installation of enterprises, and the management structure of the organized industrial area, in accordance with Law 2545/1997 on Industrial and Business Areas.

Under the approved GUP for the Municipal Unit of Igoumenitsa (Section 5.6.1), the area under consideration has been designated as Port Zone B4.5, within which no land uses or activities other than port-related activities are envisaged.

The existing and proposed Port Zone boundaries are maintained in accordance with the Igoumenitsa Port Master Plan and the decisions of the Port Planning and Development Committee (ESAL), namely Decision 02/10.12.2002 of the 4th ESAL Session and Decision 02/17.12.2004 of the 15th ESAL Session.

The determination of land uses within the Port Zone does not fall within the scope of the General Urban Plan but is the responsibility of the Port Planning and Development Committee (ESAL), pursuant to Article 19 of Law 2932/2001 (GG 145/A/2001) and Law 2971/2001 (GG 285/A/2001).

Permitted uses within the Port Zone include port facilities, infrastructure, and associated developments in accordance with the approved Port Development Master Plan and any subsequent relevant planning or technical studies.

Regarding the onshore facilities of the Project, these are located in an area designated as "Port Zone" according to the General Urban Plan (GUP) of the Municipality of Igoumenitsa, and they are consistent with the directions and requirements of both this Plan and the National Spatial Planning Framework for Industry (SPPF-I). Overall, the project under study is considered consistent with the specifications, requirements, and guidelines of the aforementioned SPPF-I.

### 5.7.3 Legal Framework of Land Uses in the Study Area

The following land uses are established near the port zone, as presented in Figure 5-25:

- Central City Functions, and
- B.3.4. PEPD 4: Off-Plan Zone A (marked 3.4), which is a peri-urban area of the Municipality that develops along a coastal zone and in zones with a width of 500 m around the urban complex of Igoumenitsa and a width of 200 m around the settlements of Mavroudi, Kastri, Agios Vlasios, the proposed extensions, and Specially Regulated Urban Development Areas (ΠΕΡΠΟ), which either have or are developing an urban character.

In PEPD 4, poultry and livestock installations, slaughterhouses, medium and high-impact industrial installations, quarries for aggregates, and marble cutting and processing units are prohibited.



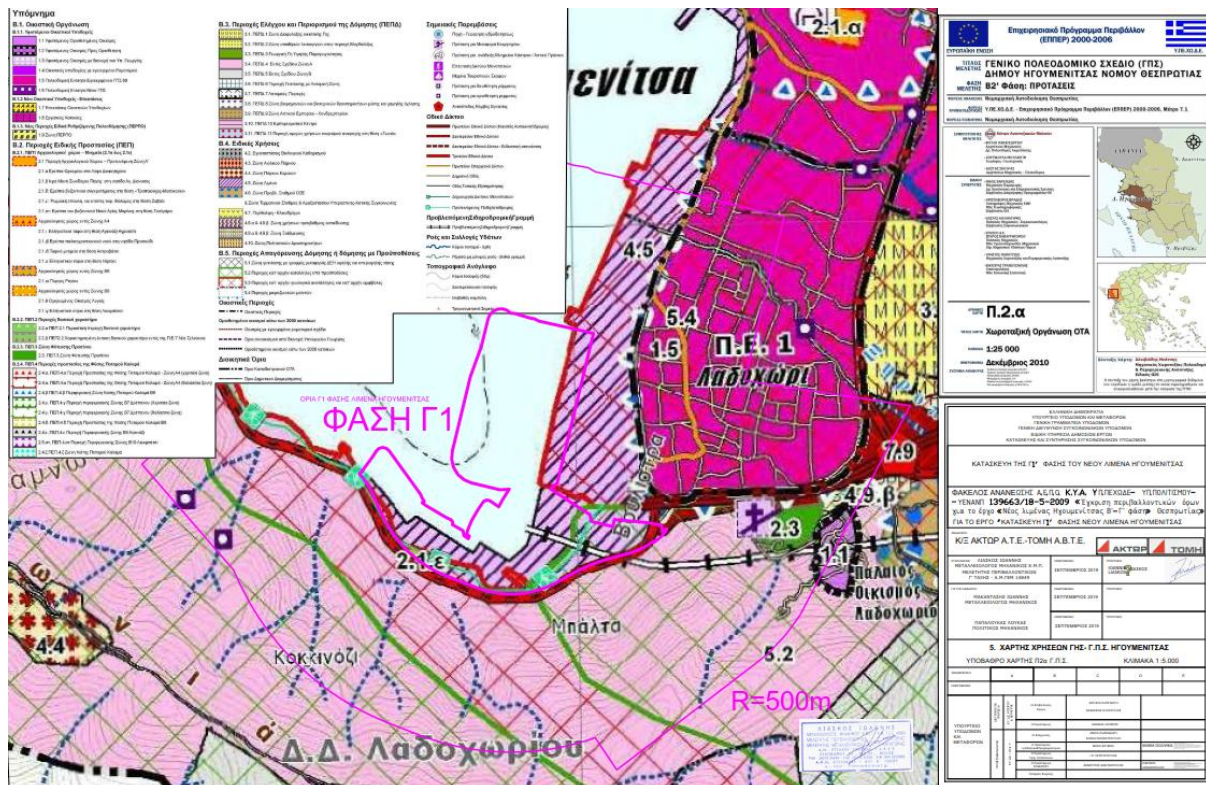


Figure 5-25: Land uses near the Igoumenitsa Port

The existing and proposed Port Zone boundaries are maintained in accordance with the Igoumenitsa Port Master Plan and the decisions of the Port Planning and Development Committee (ESAL), namely *Decision 02/10.12.2002* of the 4th ESAL Session and *Decision 02/17.12.2004* of the 15th ESAL Session.

The determination of land uses within the Port Zone does not fall within the scope of the General Urban Plan but is the responsibility of the Port Planning and Development Committee (ESAL), pursuant to Article 19 of Law 2932/2001 (GG 145/A/2001) and Law 2971/2001 (GG 285/A/2001).

Permitted uses within the Port Zone include port facilities, infrastructure, and associated developments in accordance with the approved Port Development Master Plan

More specifically, *Ministerial Decision 8216/126/14 "Revision of the Port Master Plan of Igoumenitsa"* approves the Update of the Port Master Plan of Igoumenitsa, as it is depicted in the attachment drawings of the Decision document: (a) drawing G-02 entitled 'General Layout of the Port (Completion of the works of Phase C is foreseen)' (Scale 1:2500, December 2013) and (b) drawing G-04 entitled 'Land Uses – Building Regulations of the port' (Scale 1:2000, December 2013) of OLIG SA, in cooperation with the Technical Advisor consisting of the partner consulting engineering firms ADK Consulting Engineers SA and TRITON Consulting Engineers Ltd.

Specifically, the changes in the spatial structure and future functions are approved for each of the following areas/sectors of the port:

- Old Port Area
- Ferry Service Area
- Cruise Service Area

- Central Area of International Lines
- Unaccompanied Cargo Management Area and Ro-Ro vessel service area
- Southern (Supplementary) Area of International Lines

Defining in detail terms and constraints relating to:

- port building facilities
- quay wall lengths
- description of parking areas
- operational areas within the controlled port land zone
- existing, under-construction and proposed facilities terms and limitations of development
- Permitted land uses in their majority characterized as either a.) Services – Storage or b.) Services – Commercial Zone – Storage.

According to the study for the revision of the Port of Igoumenitsa Masterplan in December 2013 with the completion of the construction works of Phase C, the Port of Igoumenitsa would have a total land area/zone of approximately 49.7 hectares.

In addition, with the proposed implementation of the marina in the north-eastern sector of the Igoumenitsa bay, this specific land area would be increased by approximately 34 hectares.

Regarding the port's land zone, up to that date the development/delimitation of eight building blocks (OT 1 to OT 8) had been approved, located within the land areas of the three development phases (A, B, and C). Permitted land uses are defined by the relevant approval decisions under the terms "Services, Commercial Zone and Warehouses."

The term "Services" covers a particularly broad range of port activities, as it defines services performed/provided within the port zone. In relation to the operation of the Port of Igoumenitsa, the following services fall within this term:

- Control and management services for passengers and circulating passenger vehicles (I.X.) provided by entities such as the Port Authority, Customs, Police, and private transport companies.
- Control and management services for circulating goods transported by freight vehicles (G.X.) or other means, provided by the same authorities.
- Accommodation of personnel of the above-mentioned services, as well as supporting facilities necessary for their operation (office spaces, parking areas for passenger vehicles, etc.).
- Supporting infrastructure for passenger and freight transport services, such as temporary vehicle parking areas, cargo consolidation and handling areas (open-air or covered).

The term "Commercial Zone" mainly concerns the possibility of commercial activities/transactions between private individuals or companies within the port facilities. It ranges from simple commercial transactions between passengers and private companies within or outside terminal buildings (e.g. shops, ticket offices, cafés, restaurants, etc.) to commercial transactions of private transport companies for goods transport (regardless of form of handling/packaging) carried out within the port zone. An application of the above provision also includes a private company for the management of unaccompanied cargo, which will operate in the future within the port, possibly within the framework of a concession agreement.



The term “Warehouses” refers to covered/enclosed spaces for the storage of goods, mechanical equipment, and other equipment, whether for temporary storage/holding (transit cargo) or for permanent/continuous storage.

A Concession Agreement was also recently signed on March 21, 2023, between the consortium Grimaldi Euromed S.p.A – Minoan Lines SA – Investment Construction Commercial and Industrial SA and the Greek State. The company under the corporate name “Igoumenitsa Port Authority SA” (OLIG SA) has the right to exclusively use and operate the buildings, land and facilities of four (4) ports, namely, the port of Igoumenitsa, the fishing shelter of Sagiada, the fishing shelter of Platania and the pleasure boat shelter of Sivota, which are located in northwestern Greece, in the administrative region of Epirus, by virtue of the Concession Agreement with the Hellenic Republic. The Concession Agreement has a duration of 60 years from its signing, thus expiring on February 3rd, 2062.

## 5.7.4 Special Management Plans

### 5.7.4.1.1 National Waste Management Plan (NWMP)

The National Waste Management Plan (NWMP) was approved by *Cabinet Act 39/31-08-2020 (GG 185/A/2020)* and amended by *Cabinet Act 5 of 18.4.2023 (GG 94/A/18.4.2023)*. It was drafted in accordance with Articles 22 and 35 of Law 4042/2012 (GG 24/A/2012) for the implementation of Article 28 of Directive 2008/98/EC, with a time horizon of 2020–2030. The NWMP sets out strategic directions for reducing the negative impacts of waste generation and management, decreasing the overall impact of natural resource use, and improving resource efficiency in order to achieve the desired high level of protection of the environment and human health.

In this context, the new National Waste Management Plan (NWMP) sets as its primary goal the reduction of municipal solid waste (MSW) landfilling to less than 10% by 2030. Achieving this target will be pursued through a series of measures, including waste prevention, the introduction of new and the strengthening of existing separate waste streams, the promotion of reuse, the increase of recycling rates, the development of the secondary materials market, public information and awareness campaigns, the rapid development of bio-waste and recyclable material collection networks, the creation of modern waste and bio-waste management facilities (WMFs and BWMFs), the significant upgrade of Material Recovery Facilities (MRFs), and, within this framework, the utilization of Waste Treatment Units (WTUs) and Recycling Recovery Units (RRUs) for the sorting of recyclable materials. It also includes the calculation, per municipality, of the quantity of recyclable materials and corresponding impurities, as well as the energy recovery of alternative (secondary/refuse-derived) fuels and processing residues.

Particular emphasis is also placed on recycling and Source Separation (SS), with the separate collection of bio-waste implemented nationwide by the end of 2022. At the same time, the plan calls for intensified efforts for the separate collection of four recyclable waste streams, giving priority to strengthening the collection of recyclable materials.

Within the framework of the new NWMP, waste is grouped into the following streams, as shown in the table below.

The main waste streams that may be generated during the construction of the Project, which fall under the categorization of the approved NWMP, are as follows:

- I. Municipal-Type Waste
- II. Excavation, Construction, and Demolition Waste (ECDW).
- III. Other waste streams subject to alternative management.

The proposed Project meets the specifications for prevention, minimization, and proper management of the above waste streams as recommended by the NWMP. Each waste stream generated will be managed in accordance with the provisions of the applicable legislation, as detailed in the Waste Management Plan (WMP) of the project, which accompanies this document. The WMP includes practices for the prevention and minimization of generated waste and the management methodology for each waste stream. The final disposal of each waste stream will be carried out by appropriately licensed entities and alternative management systems in accordance with the current applicable legislation.

#### 5.7.4.1.2 National Hazardous Waste Management Plan (NHWMP)

The National Hazardous Waste Management Plan (NHWMP) was approved by *Ministerial Decision 62952/5384/2016 (GG 4326/B/2016)* and was drafted in accordance with Article 31 of Law 4342/2015 for the implementation of Articles 22 and 23 of Law 4042/2012 as currently in force. The objective of the NHWMP is to promote, through integrated and rational management of hazardous waste, the waste hierarchy set out in Directive 2008/98/EC in order to reduce impacts on the environment and public health. At the same time, waste management is intended to contribute positively to economic and social development. Within the framework of the NHWMP, hazardous waste is grouped into the following streams:

- Industrial hazardous waste (IHW).
- Hazardous waste from healthcare units (HWU).
- Hazardous waste from public utility, public service, etc. installations (PUW).
- Hazardous waste subject to alternative management:
- Waste oils (WO).
- Waste from vehicle and industrial batteries (WVIB).
- Waste from portable electric batteries and accumulators (WPEBA).
- Waste subject to alternative management that are hazardous or generate hazardous waste during their decontamination: Hazardous waste from end-of-life vehicle decontamination (ELV), waste lamps containing hazardous substances, hazardous waste from decontamination of electrical and electronic equipment (WEEE).
- Waste containing asbestos (hazardous C&D waste).
- Small quantities of hazardous waste in Municipal Solid Waste (SQHW).
- Packaging waste containing hazardous substances.
- Waste containing polychlorinated biphenyls/triphenyls (PCB/TP).

The main streams of hazardous waste expected to be generated during the construction of the project, which fall under the above NHWMP categorization, are as follows:

- Packaging waste containing hazardous substances.
- Drilling waste containing hydrocarbons.
- Hazardous waste subject to alternative management (waste oils, WEEE, lamps, etc.).

The project is consistent with the principles of prevention, minimisation and proper management set out in the NHWMP for the above waste streams, as each hazardous waste stream generated will be managed in accordance with applicable legislation and the project-specific measures described in the Waste Management Plan (WMP) accompanying this ESIA.

#### 5.7.4.1.3 Regional Waste Management Plan (RWMP) of the Region of Epirus

Recently, the revision of the aforementioned plan was approved by JMD 44015/4029/15.09.2016 of the Ministers of Interior and Administrative Reconstruction and Environment and Energy (GG 3196/B/05.10.2016). The previous Regional Solid Waste Management Plan (PESDA) for the Region of Epirus was approved by Decision 6077/28.12.2004 of the Secretary General of the Region of Epirus. The PESDA and its revision constitute the regional implementation, within the territory of the Region of Epirus, of the general policy directions set out in the National Waste Management Plan (ESDA) (JMD 50910/2727/22.12.2003, GG 1909/B/22.12.2003), as subsequently amended, as well as the National Strategic Waste Prevention Programme, as ratified by JMD 51373/4684/25.11.2015 of the Ministers of Interior and Administrative Reconstruction and Environment and Energy (GG 2709/B/15.12.2015), in accordance with Article 31 of Law 4342/2015.

The Region of Epirus comprises four Waste Management Units (WMUs):

- 1st Waste Management Unit: Ioannina Prefecture.
- 2nd Waste Management Unit: Part of the Thesprotia and Preveza Prefectures.
- 3rd Waste Management Unit: Arta Prefecture and part of the Preveza Prefecture.
- 4th Waste Management Unit: Part of the Thesprotia Prefecture.

The Municipality of Igoumenitsa is included within the 2nd Waste Management Unit (WMU) and is served by the Igoumenitsa Landfill Facility, located near Parapotamos settlement at a distance of approximately 7 km from Igoumenitsa, and by the Igoumenitsa Waste Transfer Station (WTS), located near Agia Marina settlement, approximately 7 km from the city.

The proposed project is not expected to interfere with, nor be adversely affected by, the above waste management facilities and their associated operations.

The principal strategies and actions of the present Plan are summarized as follows:

- Establishment of separate collection systems for waste streams, at least for glass, paper, metals, and plastics, in order to ensure that at least 65% by weight of these materials is recycled through source separation by 2020.
- Establishment of separate collection of biowaste, with the objective of achieving separate collection of 40% by weight of the total biowaste generated by 2020, and treatment of the separately collected biowaste in decentralized composting facilities within each Regional Unit, aiming at the production of high-quality compost.

- Development of a dense network of Green Points (Green Collection Points) and implementation of measures to strengthen source separation by citizens for almost all waste streams, in order to achieve, at a minimum, the targets set by Law 4042/2012 by 2020.
- With regard to Construction and Demolition Waste (CDW), and in order to achieve the objectives of Article 11 of Directive 2008/98/EC, the Plan provides for the immediate establishment of four Recovery Facilities, one in each Regional Unit, and at least one inert waste landfill, together with the implementation of the extended producer responsibility (EPR) principle through the creation of an Alternative Management System.
- Development of facilities for the recovery and utilization of sewage sludge produced by the major Wastewater Treatment Plants (WWTPs) of the Region, as well as facilities for the treatment of livestock manure, considering that its management constitutes a major issue in the area. These projects may be implemented by either public or private entities.
- Implementation of co-treatment (co-processing) actions for industrial waste, within the framework of developing new waste-management infrastructure for Municipal Solid Waste (MSW), Animal By-Products (ABPs), and Agricultural Waste.
- Implementation of a Waste Prevention Programme, comprising targeted actions for citizens, businesses, and other stakeholders, with the objective of stabilizing waste generation at current levels.

The Quality of Life Committee of the Municipality of Igoumenitsa also convened in a regular public session in the Municipal Council hall, following the written invitation 4741/24-03-2022 by its Chairperson. During the session, the Committee approved the Final Updated Local Waste Management Plan (LWMP) of the Municipality of Igoumenitsa, which constitutes an integral part of *Decision 11/2022* approving it.

The waste management system of the Project aligns with the above directions of the updated RWMP and LWMP, as mentioned earlier, since during preparation and operation, practices for prevention and minimization of waste generation are foreseen, along with appropriate management of each waste stream according to the applicable legislation, as detailed in the Project's Waste Management Plan (WMP) accompanying this document.

#### 5.7.4.1.4 River Basin Management Plans for the Water District of Epirus (EL05)

The River Basin Management Plan (RBMP) of the Epirus River Basin District (EL05), was approved by Decision 1005/04.09.2013 of the National Water Committee (GG 2292/B/13.09.2013), its 1st revision, which was approved by Decision 907/21.12.2017 of the National Water Committee (GG 4664/B/29.12.2017) and its 2<sup>nd</sup> revision which was approved by GG A' 71/17.05.2024 – “Approval of the 2nd Revision of the River Basin Management Plan of the Epirus River Basin District (EL05)”<sup>43</sup>

The River Basin Management Plan of the Epirus River Basin District was prepared in accordance with Directive 2000/60/EC “establishing a framework for Community action in the field of water policy”.

According to the official website of the Ministry of Environment and Energy, River Basin Management Plans are reviewed and updated every six years. The first Management Plans refer to the 1st Management Cycle

<sup>43</sup> [Εγκεκριμένα Σχέδια Διαχείρισης 2ης Αναθεώρησης ΥΔ \(EL05\) Ηπείρου – Σχέδια Διαχείρισης ΛΑΠ](#)

(2009–2015) and remain in force until their revision. The Management Plans prepared under the 1st Revision of the River Basin Management Plans of the 14 River Basin Districts of the country, in accordance with Directive 2000/60/EC, refer to the 2nd Management Cycle (2016–2021).

Similarly, the Management Plans prepared under the 2nd Revision of the River Basin Management Plans of the 14 River Basin Districts of the country, in accordance with Directive 2000/60/EC, refer to the 3d Management Cycle (2022–2027)

The 1<sup>st</sup> revision of the River Basin Management Plan of the Epirus River Basin District was approved by Decision 907/21.12.2017 of the National Water Committee (GG 4664/B/29.12.2017). This revision includes changes in the number and typology of surface water bodies, the addition of new groundwater bodies, changes in the number of artificial and heavily modified water bodies, and a restructuring of the water body coding system, where the prefix “GR” is replaced by “EL”.

It also updates the Register of Protected Areas based on new data and adds new protected areas. The pressures and resulting loads from identified impacts are linked to water bodies in order to optimize the association of measures with them. The revision provides a more complete and reliable depiction of the status of surface water bodies. As a result of the applied methodological approach, water bodies with unknown status have been significantly reduced. The revision also includes an updated assessment of the status of groundwater bodies based on more recent monitoring data.

The 3rd River Basin Management Cycle (2022–2027) for the Epirus River Basin District (EL05) introduces a significant upgrade and tightening of water management policy, but it is not a completely new framework but rather an evolution of the 2nd cycle (2016–2021) under the Water Framework Directive.

The Epirus River Basin District (EL05) includes the River Basin Districts (RBDs) of Aoos (EL0511), Kalamas (EL0512), Acheron (EL0513), Arachthos (EL0514), Corfu–Paxi (EL0534), and Louros (EL0546), as defined under Article 3 of Directive 2000/60/EC and by Decision 706/16.07.2010 (GG 1383/B/02.09.2010 & 1572/B/28.09.2010) of the National Water Committee, regarding the designation of River Basin Districts and the assignment of competent authorities for their management and protection.

The study area falls within the Kalamas River Basin (EL0512), which has an area of 2,523 km<sup>2</sup>. The terrestrial part of the Kalamas basin lies within the Ionian biogeographical region. A significant portion of the Kalamas River Basin is covered by formations of the Ionian Zone. Within the depressions of these basins, Neogene formations (marls, marly limestones, conglomerates, etc.) and Quaternary deposits (alluvial deposits, terrace materials, talus cones and colluvial deposits, as well as coastal formations) have been deposited over the aforementioned geological formations. The most extensive occurrence of these deposits is found in the Ioannina Basin. In the revision of the River Basin Management Plan, as in the original plan, the water systems of the area are classified and their quality is analysed, and the pressures on the aquatic environment are assessed.

In the study area, with regard to the marine zone, it includes the coastal water body “Igoumenitsa Bay” with code EL0512C0003H and an area of 9.15 km<sup>2</sup>. The terrestrial part of the study area does not belong to, nor is it in the immediate vicinity of, any lake, transitional, or river water body.

According to the third revision, the waters of the water body “Igoumenitsa Bay” are classified as having below good ecological status while their chemical status is classified as good,. Overall, the status of the water body is therefore below good. The main groundwater bodies of the Kalamas River Basin are hosted within the

carbonate formations of the Ionian Geotectonic Zone and discharged through concentrated spring outlets. Sinkholes (ponors) draining closed hydrological basins play a crucial role in the recharge of these karst aquifer systems. Secondary aquifers occur within the unconsolidated Quaternary deposits, with their groundwater potential being controlled by grain-size characteristics and recharge conditions. Localized, low-yield aquifers are also developed within the flysch formations, meeting local water-supply, irrigation, and livestock-watering requirements.

In the study area, the Filiatra–Igoumenitsa groundwater body (EL050A070) has been identified, which is characterised by good chemical and good quantitative status.

In addition, general and specific environmental objectives are developed, and a series of measures are set out which constitute the tool for addressing the identified pressures and aim at achieving the environmental objectives of Directive 2000/60/EC.

With regard to the programme of measures, basic measures proposed by the revision apply to the study area, which are related to the implementation of European Union Directives.

Supplementary measure M05Σ0504 is also foreseen for the coastal water body EL0512C0003H. This measure establishes a targeted, high-frequency monitoring programme for surface water bodies under significant pollution pressure, with the purpose of improving knowledge, identifying pollution sources, and supporting the achievement of the Water Framework Directive (2000/60/EC) environmental objectives. It applies to surface water bodies (including coastal and river systems) that are either in “below good chemical status” or are exposed to high pollutant loads relative to their assimilative capacity, as identified through the national Pollutant Register and pressure–impact analysis.

The project does not conflict with the provisions and measures of the 2nd Revision of the River Basin Management Plan.

#### 5.7.4.1.5 Flood Risk Management Plan (FRMP) for the River Basin District of Epirus (EL05)

The Flood Risk Management Plans for River Basin Districts were prepared in implementation of *Directive 2007/60/EC* on the assessment and management of flood risks, with the objective of reducing adverse consequences for human health, the environment, cultural heritage, and economic activities.

This Directive has been incorporated into Greek national legislation through JMD 31822/1542/E103/2010 concerning the “assessment and management of flood risks, in compliance with the provisions of Directive 2007/60/EC on the assessment and management of flood risks of the European Parliament and of the Council of 23 October 2007” (GG 1108/B/21.07.2010), as amended by JMD 177772/924 (GG 2140/B/22.06.2017) and currently in force.

The geographical unit for the implementation of Directive 2007/60/EC on flood risk assessment and management is the River Basin District (Water District), which is the same geographical unit used under Directive 2000/60/EC (the Water Framework Directive).

The Flood Risk Management Plan for the River Basin District of Epirus (EL05), prepared in accordance with the Annex of Directive 2007/60/EC and Article 11 (Annex) of JMD 31822/1542/E103/2010 (GG



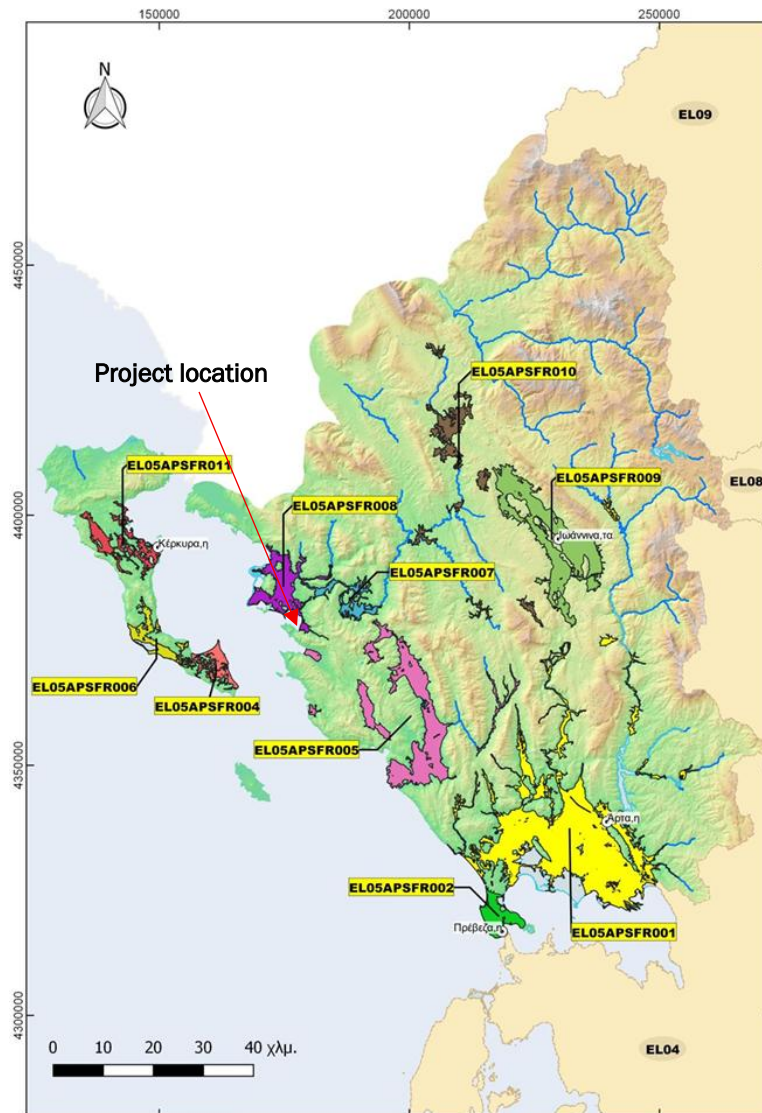
1108/B/21.07.2010), was approved by Decision YPEN/GrEGY/41368/326/15.06.2018 of the National Water Committee (GG 2684/B/06.07.2018).

The 1<sup>st</sup> Revision of the Flood Risk Management Plan for the River Basin District of Epirus (EL05) was approved by Decision YPEN/DPDYP/61532/888 (GG 2775/B/05.06.2025) "Approval of the 1st Revision of the Flood Risk Management Plan for the River Basin Districts of the Epirus Water District (EL05) and of the corresponding Strategic Environmental Impact Assessment".

As part of the implementation of the above Directive, the Special Secretariat for Water of the Ministry of Environment and Energy completed the preparation and publication of the revised Flood Hazard Maps and Flood Risk Maps for all Water Districts of the country. The Flood Hazard Maps were prepared for sections of rivers, streams, torrents, and lakes located within the revised Areas of Potentially Significant Flood Risk (APSFRs), which were identified during the revised Preliminary Flood Risk Assessment (Ministry of Environment, Energy and Climate Change – Special Secretariat for Water, 2019). The Flood Risk Maps describe the potential adverse consequences associated with flooding. The revised Flood Hazard and Flood Risk Maps are available on the dedicated website of the Ministry of Environment and Energy:

<https://floods.ypeka.gr/sdkp-lap/maps-2round/>

According to the Flood Risk Management Plan for the River Basin District of Epirus, during the revised Preliminary Flood Risk Assessment (Ministry of Environment, Energy and Climate Change – Special Secretariat for Water, 2019), areas characterized as Areas of Potentially Significant Flood Risk (APSFRs) were identified as presented in the Figure below. The analysis of the characteristics of water bodies and river basins in relation to flood mechanisms was focused on these areas.



**Figure 5-26: Epirus River Basin District (EL05), Areas of Potentially Significant Flood Risk (Source: Revised Preliminary Flood Risk Assessment, October 2019)**

As also shown in Figure 5-26, the study area falls within an Area of Potentially Significant Flood Risk named “Lower Reach – Delta of the Kalamas River and the Coastal Zone of Igoumenitsa”, with code EL05APSR008 and an area of 70,5 km<sup>2</sup>.

Measures such as EL\_05\_31\_02 – Natural Water Retention Measures in Lowland Areas and EL\_05\_33\_02 – Flood Protection Works are proposed in the Flood Risk Management Plan (FRMP) and are related to the construction of flood protection works, necessary to protect areas traversed by watercourses from flooding during severe storm events, given the recent occurrence of flood events in Greece with severe and destructive consequences.

The project does not come into contradiction with the prescribed measures of the revised and relevant Flood Risk Management Plan (FRMP), as its design incorporates, where applicable, the recommended measures of the FRMP. Additionally, it is noted that within the framework of this study, the risk from inland water floods as well as the corresponding risk from the rise of the Mean Sea Level (MSL) are examined and evaluated

(Chapter 11). Specialized measures for prevention, minimization, response, and restoration of impacts are also proposed (Chapter 12), through which the project is safeguarded against potential flood risks.

## 5.7.5 Organized Activity Receptors

According to the Regional Spatial Framework for Epirus (GG 286/AA/28.11.2018), the Regional Unit of Thesprotia was identified as an area with significant development potential in the fields of transport, logistics, tourism, and business activities.

A key objective of the regional planning framework was the strengthening of Thesprotia's role as a gateway for freight transport and transnational connectivity through the development of logistics and transport infrastructure associated with the Port of Igoumenitsa.

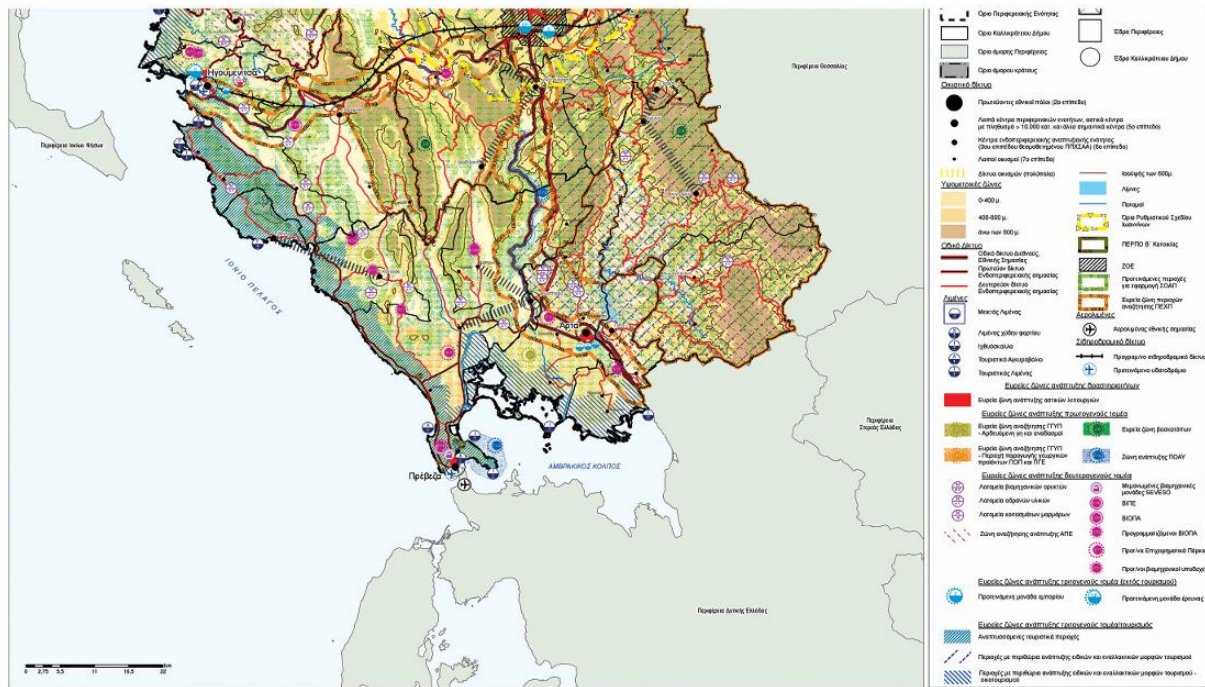
In the wider Igoumenitsa area, the most critical organized development receptors are:

- The Port of Igoumenitsa, which constitutes the principal organized transport and logistics hub of the region and one of Greece's most important gateways to Italy and Western Europe. It handles significant volumes of passengers, vehicles, and freight traffic and serves as a key node within the Trans-European Transport Network (TEN-T).
- The tourist marinas of Platara, Syvota, and Sagiada, which function as organized receptors of tourism and recreational boating activities under the management framework of the Port of Igoumenitsa.
- The Thesprotia Industrial/Business Park (BIOPA or Industrial Area of Thesprotia), which serves as the main organized receptor for industrial, manufacturing, and productive activities within the Regional Unit of Thesprotia.
- The organized tourism developments along the coastal zone, particularly in the Syvota–Platara area, where a significant concentration of tourism facilities and accommodation establishments is located.

In this context, the existing Business Park (BIO.PA.) at "Gkiata" in the Municipal Unit of Paramythia was recognized as an organized receptor of productive activities with considerable potential for further development due to its low occupancy levels. In addition, the establishment of the proposed Kastri Business Park in the Municipal Unit of Igoumenitsa was promoted, aiming to capitalize on its strategic location in proximity to the Port of Igoumenitsa and the Greek–Albanian border zone.

Regarding tourism development, the Regional Spatial Framework identified the Ionian Coastal Front as a priority tourism development zone. Within Thesprotia, the settlements of Platara, Syvota, and Perdika were recognized as important tourism poles supporting organized tourism activities. Regional policy promotes the upgrading of tourism infrastructure, the enhancement of thematic and alternative tourism, and the development of complementary tourism networks linked to cultural, natural, and recreational resources.

The framework further supported the development of marine tourism infrastructure along the Ionian coastline. Proposed projects included the establishment of a marina in the Igoumenitsa area and additional yachting facilities in the wider Syvota–Perdika coastal zone. The ports of Igoumenitsa and Preveza were also identified as potential support infrastructure for cruise tourism development.



**Figure 5-27: Spatial organization of tourism activity at the Ionian coastal front: Igoumenitsa-Plataria-Syvota-Parga**  
(Source: Map P.2.a of the Regional Spatial Framework of the Region of Epirus, 2018).

According to the Regional Spatial Framework for Epirus, key planning directions include the designation of landscape protection zones, the restriction of dispersed development, the promotion of organized development receptors, and the enhancement of environmental infrastructure and awareness.

A fundamental planning objective is the concentration of productive activities within designated and organized development receptors. The Framework prioritizes the establishment and expansion of industrial and business parks and discourages the scattered location of new productive facilities outside organized areas through stricter land-use controls. This direction is directly relevant to the Thesprotia Industrial/Business Park (BIOPA/BIPE), which is identified as the principal organized receptor for industrial and manufacturing activities within the Regional Unit of Thesprotia.

The Framework also promotes stricter control of out-of-plan development, particularly within the coastal zone, to protect landscape resources and prevent uncontrolled urban expansion. This policy is especially relevant to the organized tourism development areas of the Syvota-Plataria coastal zone, where future tourism growth is expected to focus on the qualitative upgrading of existing facilities rather than extensive spatial expansion.

For the coastal landscape zones of Parga-Perdika-Syvota, the Regional Spatial Framework promotes the enhancement of tourism services while ensuring that development remains compatible with the carrying capacity of local environmental resources. The planning approach emphasizes sustainable tourism, landscape conservation, and the protection of sensitive ecosystems. These directions directly support the continued development of the organized tourism areas of Syvota and Plataria, as well as the associated tourist marinas, which constitute key tourism infrastructure within the region.

The Framework further recognizes the importance of marine tourism and coastal recreation infrastructure. In this context, the tourist marinas of Plataria, Syvota, and Sagiada contribute to the diversification and

upgrading of the regional tourism product while supporting nautical tourism and recreational boating activities along the Ionian coast.

Special emphasis is also placed on environmental protection measures aimed at reducing pollutant loads from agricultural and industrial sources. For the Kalamas Delta–Sagiada Coastal Zone, the Framework requires actions to significantly reduce pollution entering the water bodies of the Kalamas River. These directions are particularly relevant to the coastal and port-related activities of the wider Igoumenitsa area, including the Port of Igoumenitsa, the Sagiada marina, and adjacent productive activities whose environmental management must be compatible with the protection objectives of the Kalamas estuarine and coastal ecosystems.

## 6 Detailed description of the Project

### 6.1 Basic Project Elements

Energean Hellas Ltd (Operator), together with its partners ExxonMobil Exploration and Production Greece (Crete) B.V. and HelleniQ Upstream West Kerkyra S.A., proposes to drill a single offshore exploration well, named Asopus 1, in Block 2 of the Ionian Sea, offshore western Greece, in 2027. This would be the first offshore exploration well to be drilled in western Greece since 1981.

The objective of the proposed activity is to evaluate subsurface geological formations and assess the potential presence of hydrocarbons. The well will be drilled using a mobile offshore drilling unit (MODU), specifically the Stena DrillMAX drillship, which is designed specifically for deepwater drilling operations.

The proposed activity is temporary and limited in scope, comprising the drilling, evaluation, and subsequent plugging and abandonment of the exploration well. The Project does not include hydrocarbon production, well testing, flowback or flaring activities. If hydrocarbons are identified, any further appraisal or development activities would be subject to separate permitting and environmental assessment processes.

The offshore operation will be supported by routine marine and aviation logistics, including helicopter operations from Corfu Airport and PSVs operating along established navigation routes between the MODU and an existing onshore supply base at the port of Igoumenitsa. These support activities do not require new construction or modification of coastal or onshore infrastructure.

#### 6.1.1 Offshore Exploration Well

The proposed Asopus 1 well is a single offshore exploration well designed to evaluate subsurface geological formations in Block 2. The well will be drilled from the MODU through the seabed to the target formations and will be used solely for exploration and data acquisition purposes. Well construction and abandonment will be carried out in accordance with established offshore practices, to ensure well integrity and prevent unplanned releases to the marine environment.

The well will be constructed in a series of progressively smaller hole sections, each secured with steel casing and cemented in place as drilling progresses. This staged well construction approach is standard offshore practice and is designed to maintain well integrity, manage formation pressures, and protect the surrounding marine environment. The well is currently planned as a vertical exploration well.

Drilling will commence at the seabed and proceed to the planned final depth. Drilling fluids will be used to stabilise the wellbore, transport drill cuttings to the surface, and control subsurface pressures. The types of drilling fluids, handling of cuttings, and cementing operations are described in subsequent sections of this Chapter.

Following conclusion of drilling and formation evaluation, the well will be plugged and abandoned in accordance with applicable regulatory requirements and recognised offshore industry practice.

The final well design, including casing depths and drilling parameters, will be confirmed before drilling and submitted to the competent authority as part of the Notification of Well Operations (NoWO).



## 6.1.2 Onshore Infrastructure

The offshore operation will be supported by routine marine and aviation logistics, including helicopter operations from Corfu International Airport (CFU) and PSV services along established navigation routes between the MODU and an existing onshore supply base at the port of Igoumenitsa. These support activities do not require new construction or modification of coastal or onshore infrastructure. Project-specific temporary facilities will be located within existing port and airport areas.

The supply base will function solely as a logistics interface between onshore services and offshore operations. It will be used for the storage, staging, and loading or unloading of equipment, materials, consumables, and wastes associated with the Asopus-1 drilling campaign. The location of the supply base and associated vessel routes is consistent with the Project's operational area and logistics framework.

Supply base activities will be conducted in accordance with existing port operating procedures and applicable health, safety, and environmental requirements. Its use does not require the construction of new infrastructure, expansion or modification of existing port facilities, or dredging or other seabed works within the harbour area. No liquid mud plant (LMP), bulk chemical mixing plant, or other project-specific drilling fluids processing facilities will be installed at the Port of Igoumenitsa for the proposed exploration activities.

The Port of Igoumenitsa is owned and operated by a third party (ΟΛΗΓ ΑΕ) and functions as an established commercial port, under a valid and consolidated environmental permitting and planning framework. The original Environmental Terms were issued through JMD 144974/08.06.2005 for the construction and operation of Phase B of the New Port and subsequently amended by JMD 139663/18.05.2009 to incorporate the Phase C expansion works. A further amendment was issued in 2013 to authorise the establishment and operation of a temporary construction site, including a concrete batching plant and associated ancillary facilities. The environmental permit currently in force is Decision ΥΠΕΝ/ΔΙΠΑ/12891/794/17.03.2022, which updated the applicable environmental conditions and extended the validity of the Environmental Terms until 25 September 2035. The port's spatial development and future operation are also governed by the updated Port Masterplan, approved through Ministerial Decision 8216/126/2014.

Helicopters will support offshore exploration drilling by transferring personnel between the MODU and CFU. A dedicated temporary helicopter hangar will be established within the existing airport area to support routine helicopter staging. Sufficient space is available, and installation of the hangar will not require expansion beyond the existing airport footprint. The temporary helicopter hangar will be located within the existing airport operational footprint and is not expected to require expansion of airport infrastructure or alteration of the airport's operational role.

Helicopter operations will use existing airport infrastructure and established flight procedures and will be limited to the duration of the Asopus 1 exploration drilling activity. The helicopter operator will determine flight routing and scheduling in accordance with aviation safety requirements and prevailing operational conditions. Helicopters may also be used for emergency response purposes, including medical evacuation, if required. Figure 6-1 overleaf, illustrates a typical offshore helicopter that may support the Project.



Figure 6-1: Typical offshore helicopter

### 6.1.3 Design Envelope

The design envelope defines the maximum spatial extent, duration, and scale of activities assessed in this Environmental and Social Impact Assessment (ESIA). It represents the outer bounds within which the proposed exploration drilling activity may occur, allowing for operational flexibility while ensuring that all potential environmental and social effects are assessed conservatively. The design envelope does not represent the expected extent of impacts, but rather the maximum limits assessed to ensure conservative evaluation.

Table 6-1 summarises environmentally relevant information for drilling operations, including formation evaluation, to facilitate a conservative assessment of impacts and risks.

Table 6-1: Environmentally relevant details for drilling operations

| PARAMETER                                         | DETAILS                                                                                                  | ENVIRONMENTALLY RELEVANT INFORMATION                                                                                                                                         |
|---------------------------------------------------|----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Exclusion zone                                    | 500 m radius of the rig's safety zone                                                                    | Refers to the area surrounding the drilling location where other marine users will be displaced.                                                                             |
| Total Crew Accommodation                          | MODU: typically 160, up to 180 persons-on-board (POB).<br>Support vessels: 12-18 POB                     | Informs on the volumes of sewage, greywater, brine and putrescible (e.g. food) waste generated.                                                                              |
| Endurance at Sea                                  | Varies depending on equipment and materials, including bulk transfers of chemicals, wastes and supplies. | Informs where activities may take place:<br>- Resupply of the rig will occur within the operational area.<br>- Refuelling of the rig will occur within the operational area. |
| Supply vessel major fuel tank loss of containment | 350 m <sup>3</sup> light fuel                                                                            | Informs of a credible worst-case oil spill risk in the event of a vessel collision.                                                                                          |
| Fuel Type                                         | Marine gas oil                                                                                           |                                                                                                                                                                              |
| Rig Operations                                    | Source levels from vibrating equipment and drilling                                                      | Informs expected non-impulsive sound levels during specific activities.                                                                                                      |
| Rig vessel propulsion                             | Source levels from and dynamic positioning always operating.                                             |                                                                                                                                                                              |

| PARAMETER                              | DETAILS                                                                                                                   | ENVIRONMENTALLY RELEVANT INFORMATION                                                                                                               |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Supply vessel propulsion               | Source levels from main engines always operating and from dynamic positioning during specific activities, e.g., resupply. |                                                                                                                                                    |
| Propulsion and Power – Equipment Types | Main engines, generators and thrusters                                                                                    | Result in the discharge of cooling water and the generation of oily bilge water and inform the potential for water quality and associated impacts. |
| Lighting for Navigation and Safe Work  | Minimum required for safe operations                                                                                      | Informs of the potential for lighting impacts.                                                                                                     |
| Well Testing / Flowback / Flaring      | Not included within the scope of the Project                                                                              | Informs emissions to the atmosphere and light emissions                                                                                            |
| Well Evaluation Techniques             | Vertical Seismic Profiling (representing the evaluation technique with the loudest sound source)                          | Informs a worst-case credible impulsive sound level during well evaluation over a maximum 12-hour survey duration each on up to two well sections. |

The design envelope has been developed based on the current stage of project design and reflects the maximum foreseeable parameters of the exploration drilling programme. The parameters applied to each impact assessment are identified in the relevant assessment section.

Table 6-2 summarises the design envelope for the proposed Asopus 1 exploration drilling activity, including the anticipated timeframe, maximum activity duration, number of wells assessed, and the maximum spatial extent of operations.

**Table 6-2: Design Envelope**

| PARAMETER                                                                                | EXPLORATION DRILLING                                                                                                                           |
|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Earliest Start Date                                                                      | 14 February 2027                                                                                                                               |
| Latest Finish Date                                                                       | 31 December 2027                                                                                                                               |
| Maximum number of wells                                                                  | 1 well                                                                                                                                         |
| Maximum spatial extent within which the activity can occur for the exploration programme | 0.79 km <sup>2</sup> with a 500 m rig exclusion zone. For reference, the Block 2 Lease Agreement includes a surface of 2,422.1 km <sup>2</sup> |
| Expected Duration                                                                        | 57-67 days. Maximum assessed duration: 90 days                                                                                                 |

The dates above define the potential operational window within which drilling may commence and be completed. The offshore campaign is expected to last approximately 57 days for a dry well or 67 days if hydrocarbons are encountered. The 90-day duration represents the outer scheduling envelope for delays and operational contingencies. Unless otherwise stated, quantified activity, discharge, waste and emissions estimates are based on the 67-day operating case and the separately quantified contingency scenarios. Any extension involving additional active drilling, logistics movements or discharges beyond the assessed quantities will be reviewed through the applicable change-management and regulatory processes.

Based on the current design, the permanent physical footprint on the seabed associated with the exploration activity is expected to be less than 1 m<sup>2</sup>. The wellhead will be left in-situ as part of the permanent plug and abandonment. Retention of the wellhead forms part of the approved abandonment concept assessed for the Project and avoids additional seabed intervention associated with recovery activities.

No additional facilities, subsea structures, pipes or processing infrastructure will be installed nor remain on the seabed following completion of the Project. Any material changes to the proposed activity that would extend beyond the parameters assessed in this ESIA may be subject to the applicable regulatory requirements.

## 6.2 Project Location

The proposed Asopus-1 exploration well is located within the Block 2 licence area in the Greek Exclusive Economic Zone (EEZ) in the northwestern Ionian Sea. It is approximately 44.3 km (23.9 nautical miles) offshore Othonoi Island (Figure 1 2), approximately 3.2 km (1.7 nautical miles) from the Italian Exclusive Economic Zone (EEZ) and in water depths of approximately 840 m.

The deep-water setting means drilling activities will occur well offshore, at a substantial distance from coastal receptors. There are no islands, coastal features, or fixed subsea installations in the immediate vicinity of the well location.

The location of the proposed Asopus 1 exploration well (Section 1.3.1.1) was selected based on technical and operational considerations, including MODU capability, well design requirements, and logistical feasibility within the Block 2 licence area.

During drilling operations, a temporary 500 m safety zone (Section 1.3.1.2) will be established around the MODU at the Asopus-1 well location to ensure navigational safety and safe conduct of offshore operations. This safety zone covers approximately 0.79 km<sup>2</sup> and will apply only during drilling operations while the MODU is on location. Once drilling is completed and the MODU has departed the site, the safety zone will be removed, and normal maritime activities may resume.

The Project will also utilise two existing onshore support facilities (Section 1.3.1.4) for logistics and aviation activities:

- (i) Onshore logistics/supply base located within the Port of Igoumenitsa (mainland Greece); and
- (ii) Corfu International Airport (CFU), which will be used as the helicopter operations base for personnel transfers between the onshore environment and the Mobile Offshore Drilling Unit (MODU).

The existing transport and logistics facilities will remain operational within their current permitted boundaries throughout the Project.

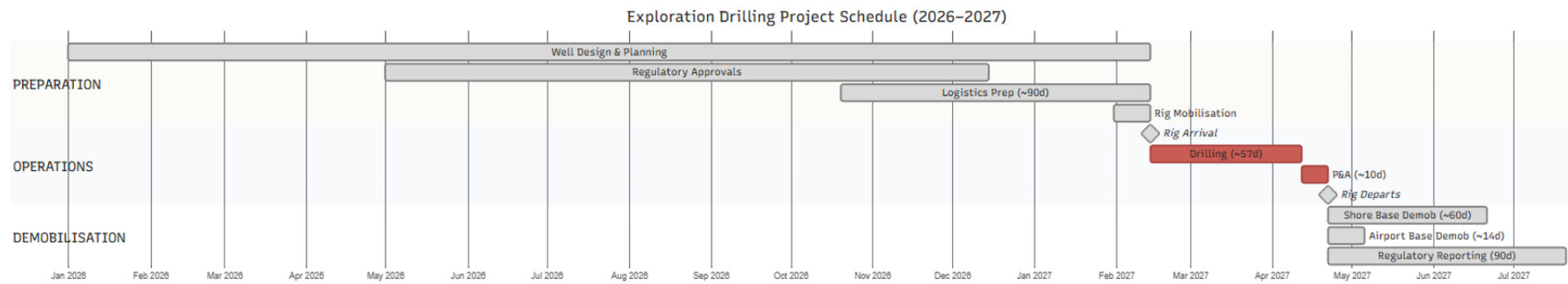
## 6.3 Operations time schedule

The indicative Project schedule for the Asopus-1 exploration drilling programme is presented in Figure 6-2. The schedule covers the main stages of the Project, including preparation, offshore drilling operations, plugging and abandonment, and demobilisation.

Preparation activities, including well planning, regulatory approvals and logistics arrangements, are expected to take place before rig mobilisation. Offshore operations will commence following rig arrival at the well location, with drilling expected to last approximately 57 days for the dry-well case or 67 days if hydrocarbons are encountered, including formation evaluation and permanent plugging and abandonment. Demobilisation and regulatory reporting will continue after completion of offshore activities. The schedule is indicative and

may be adjusted depending on regulatory approvals, rig availability, operational requirements, weather conditions and final execution of the drilling programme.

The final activity schedule will be confirmed as part of the Notification of Well Operations (NoWO) submitted to the competent authority before drilling.



**Figure 6-2: Operations time schedule**

**Note:** Indicative schedule only; timing remains subject to permits, operational constraints, vessel availability and final execution readiness.



### 6.3.1 Drilling Preparation and Mobilisation

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The Asopus-1 exploration drilling campaign is planned to take place in 2027, with a start window in the first quarter of 2027 (Q1 2027), subject to regulatory approvals, contractor availability, and project readiness. Subject to operational, contractor and regulatory constraints, drilling is anticipated to commence outside the peak tourism season where practicable.

### 6.3.2 Drilling Operations

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Once the MODU arrives at the operational area, drilling and associated activities will be carried out continuously, 24 hours per day, 7 days per week, to ensure safe and efficient operations. The MODU will remain on location only for the period required to complete drilling, formation evaluation, and plugging and abandonment of the well, as applicable.

The expected duration of the offshore campaign is approximately 57 days for a dry well or 67 days if hydrocarbons are encountered. For environmental assessment purposes, the design envelope allows a maximum duration of 90 days to account for potential unplanned delays such as adverse weather conditions or operational contingencies.

The references to 2027 presented in the design envelope represent the available operational window and should not be interpreted as the anticipated duration of drilling activities.

### 6.3.3 Abandonment – Demobilisation

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All offshore activities will cease once the exploration programme is concluded and the MODU departs the site. The abandoned wellhead will remain in situ on the seabed in accordance with recognised offshore industry practices, applicable regulatory requirements, and the final abandonment programme.

## 6.4 Detailed description of Facilities

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### 6.4.1 Mobile Offshore Drilling Unit (MODU)

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The proposed Asopus 1 exploration well will be drilled using a drillship-type mobile offshore drilling unit (MODU). A drillship is a self-propelled vessel designed specifically for deep water offshore drilling, equipped with a drilling package and a moonpool that allows drilling equipment to be deployed directly through the hull to the seabed.

#### 6.4.1.1 Drillship Specifications

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Project description is based on the Stena DrillMAX drillship, or a technically equivalent dynamically positioned drillship of comparable capability. The Stena DrillMAX is owned and operated by Stena Drilling and will be contracted by Energean for the exploration drilling programme (Figure 6-3). The vessel is a sixth-generation

drillship designed for operations in harsh offshore environments and is equipped with a dynamic positioning (DP3) system to maintain station without anchors. It can drill in water depths of up to 3,000 m, which exceeds the water depth at the proposed Asopus 1 well location. The use of a dynamically positioned drillship avoids the need for anchor deployment and associated seabed disturbance.



(Source: Stena Drilling Website)

Figure 6-3: Stena DrillMAX

Before operations commence, the drillship will be covered by a Report of Major Hazards (RoMH), accepted by HEREMA. It will undergo Energean's internal rig acceptance and assurance process to confirm compliance with applicable regulatory requirements and good international industry practice.

Key specifications of the drillship are summarised in Table 6-3.

Table 6-3: Drillship specifications based on the Stena DrillMAX<sup>44</sup>

| COMPONENT               | SPECIFICATION                                                                                                  |
|-------------------------|----------------------------------------------------------------------------------------------------------------|
| Dimensions              | 228 m (long) x 42 m (wide) x 19 m (moulded depth)                                                              |
| Drafts                  | 12 m operating / 8.5 m transit                                                                                 |
| Variable Deck Operating | 19,500 Mt at 12 m                                                                                              |
| Transit Speed           | Up to 12 knots                                                                                                 |
| Maximum water depth     | 3,000 m                                                                                                        |
| Main Power              | 6 x Wartsila 16V32C diesel engines rated at 7.29 MW driving 6 x ABB AMG 1120MR10 LSE alternators rated at 7 MW |
| Fuel Oil Storage        | 10,805 m <sup>345</sup>                                                                                        |
| Potable Water Storage   | 2,052 m <sup>3</sup>                                                                                           |
| Drill Water Storage     | 4,464 m <sup>3</sup>                                                                                           |

<sup>44</sup> Stena Drilling (2026) Stena DrillMAX. Accessed on 23.03.2026: <https://www.stena-drilling.com/our-fleet/stena-drillmax/>

<sup>45</sup> Fuel storage capacity does not represent a credible accidental release volume. Credible spill scenarios are assessed separately within the accidental events assessment.

| COMPONENT             | SPECIFICATION                                                                                                                   |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Brine Storage         | 490 m <sup>3</sup>                                                                                                              |
| Base Oil Storage      | 490 m <sup>3</sup>                                                                                                              |
| Liquid Mud Storage    | Mud pits 2,009 m <sup>3</sup> (1,004 m <sup>3</sup> active + 1,005 m <sup>3</sup> reserve)<br>Waste mud tank 502 m <sup>3</sup> |
| Bulk Material Storage | 420 m <sup>3</sup> cement + 420 m <sup>3</sup> barite/bentonite                                                                 |
| Sack Storage          | 250 tonnes                                                                                                                      |

#### 6.4.1.2 Drilling Mud Systems

The MODU is equipped with an integrated drilling fluid (mud) system comprising separate active and reserve mud systems to support both routine and contingency drilling operations. Water-based mud (WBM) will be used throughout the project. Drilling fluids are used to maintain well pressure, stabilise the wellbore, cool and lubricate the drill bit, and transport drill cuttings to the surface.

The system includes bulk storage facilities for barite and cement. The combined usable storage capacities are approximately 420 m<sup>3</sup> for barite/bentonite and 420 m<sup>3</sup> for cement. Bulk materials are transferred pneumatically from supply vessels to the storage tanks and then automatically conveyed to surge tanks and mud mixing units. The mud mixing system includes automated sack handling and chemical dosing equipment, high-rate mixers, caustic mixing units and dust collection systems designed to minimise airborne particulate releases during material handling.

Tank details are shown in Table 6-4 below:

**Table 6-4: Bulk Storage Tank Details**

| TANK                 | NUMBER | COMBINED TANK CAPACITY M <sup>3</sup> |
|----------------------|--------|---------------------------------------|
| Barite Storage Tanks | 4      | 420                                   |
| Cement Storage       | 4      | 420                                   |
| Barite Surge Tanks   | 2      | 10                                    |
| Cement Surge Tank    | 1      | 2.16                                  |

Drill water is used primarily to prepare drilling fluids and cement during drilling operations. The MODU is equipped with two dedicated drill water storage tanks, located on the port and starboard sides of the vessel, with a combined storage capacity of approximately 4,464 m<sup>3</sup>. Drill-water storage tanks may receive seawater or freshwater produced onboard, depending on the requirements of the relevant drilling-fluid, cementing or technical operation and distributed via service pumps to the mud pits, cementing unit, shale shakers, centrifuges and other operational systems, as required. Tank filling operations are automatically monitored and controlled to prevent overfilling.

A series of active and reserve mud pits are used for the storage, circulation and management of drilling fluids during operations. The mud pits are located within the mud module and in dedicated port and starboard hull tanks below it. The active mud pits have a combined capacity of approximately 1,004 m<sup>3</sup>, while reserve mud pits provide an additional 1,005 m<sup>3</sup> of storage capacity to support contingency operations and maintain sufficient drilling fluid reserves.

Additional tanks are provided for chemical additives, slugging operations and waste mud storage, including a dedicated waste mud tank with a capacity of approximately 500 m<sup>3</sup>. The mud pits form part of the closed-loop mud circulation system, allowing drilling fluids returning from the well to be processed, conditioned and recirculated through the mud treatment equipment before reuse.

Mud circulation is maintained using high-pressure mud pumps, which pump drilling fluids through the drill string and return fluids and cuttings to the surface for treatment. Returned mud passes through a mud treatment and recovery system comprising shale shakers, desilters, centrifuges, degassers and associated treatment tanks. This equipment separates drill cuttings and entrained gas from the drilling fluid, allowing treated mud to be recirculated and reused where practicable, thereby reducing overall mud consumption and waste generation.

#### 6.4.1.3 Managed Pressure Drilling (MPD) System

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The MODU is equipped to undertake Managed Pressure Drilling (MPD) if required during drilling operations. MPD is not anticipated to be used routinely but is available as a contingency measure where drilling conditions indicate a need for enhanced wellbore pressure management.

MPD enables more precise control of annular pressure within the wellbore than conventional drilling methods alone can. The system may be used where there is uncertainty in the pressure regime or where a narrow operational margin exists between pore pressure, fracture pressure and drilling fluid density requirements.

The use of MPD can help minimise downhole fluid losses to the formation, reducing the likelihood of formation damage, loss-circulation events and associated remedial operations. It can also help with the early identification and management of pressure-related drilling hazards, supporting well integrity and safe drilling operations.

Where deployed, MPD forms part of the MODU's integrated drilling and well-control systems and does not introduce any additional routine emissions, discharges, waste streams or seabed disturbance beyond those already assessed for the Project.

#### 6.4.1.4 Cementing Unit

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The cementing unit is located within the mud module of the MODU and is operated by a third-party cementing contractor. The unit is used to prepare, mix, and pump cement slurry and associated fluids for well construction and well integrity operations.

The system comprises two diesel-driven high-pressure pumps (rated up to 15,000 psi, with one unit configured to 10,000 psi), cement storage tanks, a surge tank, and an integrated chemical mixing system. The pumps provide the required pressure and flow capacity for high-pressure fluid transfer during offshore cementing operations.

The primary purpose of the cementing unit is to support casing cementing operations, ensuring zonal isolation and the well's long-term structural integrity. In addition, the unit is used for pressure testing,

including well barriers, Blowout Preventer (BOP), choke and kill lines, and associated riser systems. It can also be deployed as part of well-control operations, including well-kill circulation, where required.

#### 6.4.1.5 Well Control Equipment

Well control is provided through a combination of equipment designed to prevent uncontrolled release of formation fluids and to enable safe management of the well under both normal and emergency conditions. Primary well control is provided by the drilling mud system, which maintains hydrostatic pressure in the wellbore to balance formation pressures and prevent influx. Mud pumps, riser circulation, and mud treatment equipment support continuous circulation and conditioning of the drilling fluid.

Secondary well control is provided by the Blowout Preventer (BOP) system, which forms the primary mechanical barrier to seal the well in the event of a loss of mud control or a “kick”. The BOP stack includes annular preventers and ram preventers (including blind-shear and variable-bore rams) that can close around the drill string or shear it, sealing the wellbore. The system is controlled via a subsea electro-hydraulic multiplex (MUX) control system and supported by independent emergency activation systems (including automatic shutdown, ROV intervention, and acoustic control) to ensure well closure under failure conditions.

Well control and pressure management are supported by the choke-and-kill system and the marine riser. The choke and kill lines provide controlled pathways to circulate out influxes and manage well pressure during well kill operations. Returned fluids are routed to the mud gas separator (MGS), where gas is safely separated and vented, while liquids are returned to the mud system for processing and reuse where appropriate. The riser provides the physical conduit between the subsea wellhead and the drilling unit and integrates these circulation and control lines.

A diverter is installed at the top of the marine riser to protect personnel and the rig floor. Gas is normally avoided through early detection and secondary well control practices, with the diverter reserved as a last resort in the unlikely event that gas reaches the rig floor despite these measures. This system rapidly redirects flowing well fluids away from the vessel via dedicated overboard lines until the BOP can be closed.

In addition to the primary BOP, a further emergency shut-in device (E-SID) shall be installed on the wellhead prior to running and latching the BOP – see Figure 6-4. The device, known as the Kinetic Blowout Stopper (K-BOS), comprises a single ram that can shear tubulars/cable within the Project’s defined shearing envelope, and seal the wellbore. The E-SID remains passive during normal operations and serves as an additional well-control barrier layer that can be activated in the unlikely event of BOP system failure.

The electrically initiated, pyro-mechanical K-BOS E-SID control system is completely independent of the MODU BOP control system, including its power supply, communications, and actuation circuits. This independence ensures that the K-BOS E-SID can be activated even in the unlikely scenario where the primary BOP control system is unavailable or inoperable. Upon activation, the K-BOS is designed to rapidly shear and seal the wellbore, providing an additional layer of emergency well control and reducing the risk of an uncontrolled release of formation fluids.

Together, these systems provide layered well control capability: hydrostatic control via drilling mud, mechanical sealing via the BOP, controlled circulation via choke and kill equipment, and emergency fluid diversion via the diverter system.

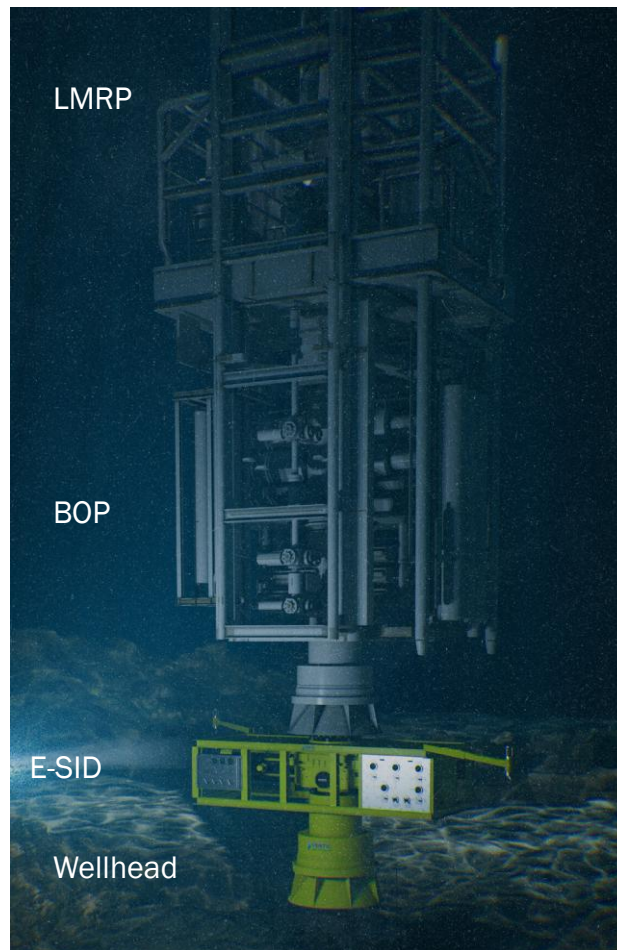


Figure 6-4: Emergency Shut-in Device

#### 6.4.1.6 Wastewater Management Systems

##### 6.4.1.6.1 Ballast Water System

The drilling unit is equipped with an integrated ballast water system designed to maintain vessel stability, trim and draft during transit, drilling operations and adverse weather conditions. The system enables controlled transfer of seawater between dedicated ballast tanks to ensure compliance with stability requirements and safe operating conditions throughout all phases of the drilling campaign.

The ballast system comprises two main ballast pumps, each with a nominal capacity of approximately 2,500 m<sup>3</sup>/h, associated ballast piping, remotely operated valves and a network of ballast tanks distributed throughout the vessel. The system is controlled through the vessel's Integrated Automation System (IAS), allowing ballast operations to be monitored and managed from the bridge or engine control room. Additional ballast, bilge and general service pumps are provided to serve specific tanks and compartments and to support emergency dewatering requirements.

Ballast water is taken on board and discharged as required to maintain vessel stability. During normal operations, ballast is treated in accordance with the vessel's Ballast Water Management Plan and applicable international maritime regulations, including the requirements of the International Convention for the Control



and Management of Ships' Ballast Water and Sediments (BWM Convention). Ballast-water exchange may be undertaken as a contingency, where permitted under the approved Ballast Water Management Plan and applicable requirements.

To minimise the risk of introducing non-native aquatic species and pathogens, the drilling unit is fitted with a Ballast Water Management System (BWMS) comprising mechanical filtration and ultraviolet (UV) disinfection. During ballast uptake, seawater passes through a filtration unit that removes suspended solids, sediments and larger organisms before entering the ballast tanks. During both ballasting and de-ballasting operations, the water passes through a UV treatment reactor where microorganisms are exposed to ultraviolet light, preventing reproduction and reducing the risk of biological transfer between marine environments.

The treatment process does not involve the addition of chemicals and therefore does not generate chemical residuals or treatment by-products requiring discharge management. Operational parameters and treatment records are automatically logged and maintained in accordance with regulatory requirements. Any system malfunction or operational deviation is recorded in the Ballast Water Record Book and managed in accordance with vessel procedures.

Ballast water discharges will consist solely of treated seawater and will be undertaken in accordance with applicable international and national requirements. Consequently, the potential for adverse environmental effects associated with ballast water operations is considered low.

#### 6.4.1.6.2 Bilge Water System

The drilling unit is equipped with a comprehensive bilge water collection and management system designed to collect, contain, monitor and treat water accumulating within machinery spaces and other enclosed compartments. The system forms an important component of the vessel's pollution prevention arrangements and is designed to prevent the uncontrolled discharge of oily water to the marine environment.

Bilge water may originate from routine machinery operations, equipment drainage, minor leaks, washdown activities, condensation and emergency dewatering operations. Bilge wells and collection points are distributed throughout engine rooms, thruster rooms, machinery spaces and other technical compartments. These collection points are fitted with level-monitoring systems and alarms that provide automatic indication of elevated bilge levels and facilitate timely removal of accumulated fluids.

Collected bilge water is transferred to dedicated bilge holding tanks where it is temporarily stored before treatment (Table 6-5). The vessel is equipped with an oily water separation system that separates oil from water before discharge or disposal. Recovered oil is transferred to dedicated waste oil storage tanks for subsequent offloading to licensed waste reception facilities, while treated water may only be discharged when it complies with the applicable MARPOL requirements and the operational limits of the oily water separator. Where discharge criteria cannot be met, bilge water will be retained onboard for transfer to approved port reception facilities.

The bilge system also incorporates emergency pumping arrangements to respond to flooding incidents in machinery spaces. Additional pumps are provided in engine rooms, thruster compartments and auxiliary machinery spaces to maintain the vessel's safety and watertight integrity under abnormal conditions.

Bilge water management will be undertaken in accordance with the vessel's environmental management procedures, MARPOL Annex I requirements and applicable flag-state and classification society requirements. Using dedicated collection systems, treatment equipment, monitoring arrangements and controlled disposal procedures, the risk of hydrocarbon releases to the marine environment is minimised, and residual environmental impacts are expected to be negligible.

### 6.4.1.6.3 Drainage System

The vessel is equipped with a segregated drainage system designed to collect and control liquids from exposed decks, machinery spaces and drilling-related areas. Drainage is collected via scuppers, deck drains and dedicated piping networks and routed by gravity to a series of intermediate and main drain tanks located throughout the vessel.

Key drainage tanks include the Topside Drain Tank (985 m<sup>3</sup>), serving the drill floor and well test areas; the Deck Drain Tank (985 m<sup>3</sup>), for safe areas and riser storage; and the Mud Module Drain Tank (96 m<sup>3</sup>), supported by smaller daily and machinery-space holding tanks. All tanks are fitted with level sensors and high/low alarms integrated into the vessel's Shipboard Vessel Control (SVC) system.

The main drainage and bilge collection tanks are summarised in Table 6-5.

**Table 6-5: Drainage and bilge collection tanks**

| TANK                                                                | INDICATIVE CAPACITY (M <sup>3</sup> ) |
|---------------------------------------------------------------------|---------------------------------------|
| Topside Drain Tank (Drill Floor and Well Test Areas <sup>46</sup> ) | 985                                   |
| Daily Holding Tank                                                  | 9.4                                   |
| Deck Drain Tank (Safe Areas and Riser Storage Areas)                | 985                                   |
| Mud Module Drain Holding Tank                                       | 96                                    |
| Forward Bilge Holding Tank                                          | 21.9                                  |
| Aft Bilge Holding Tank                                              | 54.5                                  |
| Separated Bilge Oil Tank                                            | 13.6                                  |

Deck drainage is managed according to its source and potential for contamination. Drainage from uncontaminated areas may be discharged via the designated drainage system, whereas potentially oil-contaminated drainage is diverted to dedicated holding or treatment systems. Oily water is discharged only if it meets the applicable MARPOL Annex I requirements, including the 15 ppm oil-content limit where applicable; otherwise, it is retained for further treatment or transferred ashore.

### 6.4.1.6.4 Sanitary and Greywater System

Domestic wastewater generated onboard comprises blackwater (sewage) from sanitary facilities and greywater from accommodation, galley, laundry, and washroom facilities. These wastewater streams are

<sup>46</sup> The reference to "Well Test Areas" reflects the original vessel design terminology and does not imply that well testing forms part of the proposed activity.

managed through dedicated collection and treatment systems designed to meet applicable MARPOL Annex IV requirements and other relevant regulatory standards.

Sewage is processed through an onboard treatment plant that incorporates maceration and biological treatment processes before discharge. Treated effluent is discharged only where permitted by applicable regulations and operational procedures. Within restricted areas and where required by local regulations, untreated sewage is retained onboard in dedicated holding tanks and discharged only when regulatory conditions permit.

Greywater is directed to the final stage of the sewage treatment system, where it undergoes further treatment and disinfection before discharge. Disinfection is achieved through controlled dosing of chlorine-based solutions, which are consumed during treatment. A sampling point is provided for treated effluent. Treated effluent quality is monitored through routine inspection and operational checks undertaken by vessel personnel as part of the vessel's environmental management procedures.

#### 6.4.2 Platform Support Vessels (PSVs)

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Offshore exploration drilling operations will be supported by PSVs operating between the onshore supply base at Igoumenitsa and the MODU at the Asopus 1 well location. These vessels provide essential logistical and safety support throughout the drilling campaign. Support vessel activities will be limited to the duration of the offshore exploration drilling campaign.

While operating within the operational area, support vessels will either remain stationary or operate at low speeds, as appropriate to operational requirements. Their primary functions include:

- Providing safety-related support, including assistance with monitoring the 500 m safety zone around the MODU;
- Transporting equipment, drilling materials, provisions, fuel, water and limited waste between the MODU and the onshore supply base; and
- Supporting project-related inspection, survey, and verification activities before and after drilling operations, if applicable.

All support vessels will be contracted from third-party service providers and will meet Energean's marine vetting and assurance requirements. Their activities will be confined to established offshore supply routes and the immediate vicinity of the MODU.

Two PSVs may be operating in support of drilling activities at any one time. Vessels will hold the necessary class and statutory certification and operate under valid Hellenic Coast Guard permits, in compliance with applicable international maritime safety and environmental protection requirements, including IMO and MARPOL conventions.



(Source: Tidewater Website)

**Figure 6-5: Indicative Platform Supply Vessels**

Figure 6-5 shows an indicative platform supply vessel of a type that may support the Project. Final vessel selection will depend on contractor availability and operational requirements. The selected vessels will remain within the technical and environmental parameters assessed in this ESIA.

The indicative vessel features DP-2 dynamic positioning, a large open cargo deck, accommodation for the vessel crew and project personnel required for its assigned activities and tanks for fuel, water, liquid mud, methanol, and dry bulk materials. The vessel is equipped with twin Z-drives, bow thrusters, and features to manage energy efficiently.

Indicative vessel characteristics include:

- Length overall: ~89 m
- Beam: ~ 19 m
- FiFi-1 firefighting capability
- Diesel-electric propulsion
- DP-2 dynamic positioning system with multiple reference systems.

### 6.4.3 Remotely Operated Vehicle (ROV)

A Remotely Operated Vehicle (ROV) is an unoccupied, manoeuvrable underwater vehicle. The Project ROV will be deployed and operated from the MODU using a tether and umbilical system for power, control and data transmission. ROV operations will be conducted intermittently throughout the drilling campaign to support offshore activities. The ROV will be used for seabed inspection before drilling, inspection and monitoring of subsea equipment such as the riser and blowout preventer (BOP), support during well plug-and-abandonment and a post-operation survey to verify seabed clearance and the absence of debris before the rig release.

ROV operations are localised to the immediate vicinity of the well location. Activities may involve temporarily wet-parking the ROV on the seabed. Any interaction with the seabed is expected to be minor, short-term, and spatially confined, resulting in no significant or lasting alteration of seabed conditions. ROV activities will be conducted in accordance with applicable Environmental Terms and with the general obligations of the Barcelona Convention Offshore Protocol to prevent pollution and minimise impacts on the marine environment.

## 6.4.4 Support infrastructure

The offshore exploration drilling activity will be supported by a combination of marine and aviation logistics, together with the use of an existing onshore supply base. These supporting components are required to transport personnel, equipment, consumables, and wastes to and from the MODU and to support routine resupply during the drilling campaign.

The supply vessels and helicopters supporting the Project will be contracted temporarily from third-party service providers for the duration of the exploration drilling activity. Project-specific support facilities will be located within existing port and airport areas. No new permanent onshore or offshore infrastructure is required to support the proposed activities.

### 6.4.4.1 Logistics base

The onshore temporary logistics base at Igoumenitsa Port will function as a storage, staging, and load-out area for equipment and materials required during the drilling programme. Activities will include the receipt, temporary storage, handling, and consolidation of drilling equipment, tubulars, consumables, and support materials before loading onto offshore supply vessels for transport to the drilling rig. The base will also manage backload operations, receiving equipment, waste streams, and empty containers returning from the rig for temporary storage, inspection, and onward transport to approved facilities.

The temporary base will provide a reliable and well-organised onshore logistics chain, minimising offshore downtime and supporting the safe and efficient transfer of materials between the port and the drilling installation.

Use of the existing port infrastructure avoids the need for new permanent facilities and helps minimise environmental disturbance. All operations within the temporary base will be conducted in coordination with port authorities and in accordance with established safety, environmental, and traffic management procedures.

A layout of the facility, including operational zoning, is presented in Figure 6-6, while the geographical location within the port area is shown in Section 1.3.1.4.

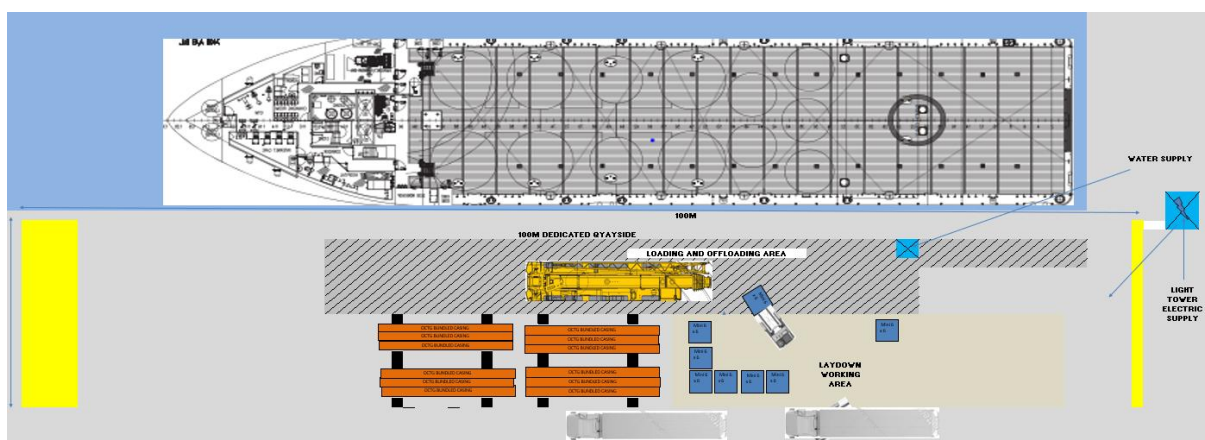


Figure 6-6: Zone 2 pictogram – staging area for loading the vessel

The indicative main operational zones of the temporary supply base are described below:

- The Supply Base is expected to comprise an open yard storage area of up to approximately 13,000 m<sup>2</sup> of level paved or interlocked hardstanding located within a secure port facility compliant with the International Ship and Port Facility Security (ISPS) Code. The yard will include appropriate drainage and operational lighting systems together with internal access routes suitable for heavy vehicle movements and logistics operations.
- Quayside infrastructure is expected to include a dedicated berthing arrangement for PSVs, with an indicative quay length of approximately 100 m and water depths in the range of approximately 8–10 m. Berthing facilities will utilise existing quayside infrastructure suitable for offshore logistics operations.
- A dedicated staging area will be made available adjacent to the berth to enable safe and efficient loading of the PSVs.
- Temporary covered storage facilities may also be utilised, comprising warehouses or sheltered storage areas with concrete flooring and lighting. The indicative covered storage area is expected to range between approximately 500 and 1,000 m<sup>2</sup>, depending on operational requirements.
- Utilities and ancillary services are expected to include electricity supply, operational lighting and fresh water supply capability at the quayside, provided via pipeline connection.
- Waste management facilities will be provided for the temporary handling and segregation of waste generated at the Supply Base and waste backloaded from the MODU and support vessels. Waste handling, temporary storage and onward transfer will be undertaken in accordance with applicable port requirements and national waste-management legislation. MARPOL requirements will apply to the management and transfer of ship-generated waste, as applicable.

This operational zoning supports the orderly segregation of storage, staging, and material-handling activities, while also identifying areas where enhanced environmental and safety controls can be applied, particularly at the quayside interface and within high-traffic logistics corridors.

Supporting infrastructure will include prefabricated, portable office units; security huts at entry and exit points; a clearly defined perimeter and temporary fence line controlling access to the operational area; and a quarantine storage area for materials requiring inspection or temporary isolation.

Loading, unloading and material handling activities will be supported by conventional mobile logistics equipment typically used in offshore drilling support operations. Indicative equipment may include:

- Forklifts with lifting capacities of approximately 11 tonnes and 16 tonnes, equipped with side-shift capability and load indication systems;
- One semi-trailer (minimum indicative length of 40 ft) with prime mover and driver;
- Trailers fitted with steel headboards, casing bolsters and appropriate load securing arrangements;
- One heavy-duty truck (semi-trailer configuration) with an indicative carrying capacity of approximately 40 tonnes;
- Light duty 4x4 pick-up vehicles for personnel transport and support activities; and
- A certified wharf crane with an indicative lifting capacity of approximately 160 tonnes, with crane services available on a call-out basis, including during night-time operations, weekends and public holidays, depending on operational requirements.



The Supply Base facilities and equipment described above represent a typical and indicative offshore drilling logistics configuration consistent with standard industry practice for supporting deepwater exploration campaigns. As the Project will utilise existing port infrastructure and conventional logistics equipment, the associated environmental impacts are expected to be temporary, localised and limited in nature.

#### 6.4.4.2 Corfu International Airport

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A temporary helicopter hangar will be installed within the existing infrastructure footprint of Corfu International Airport (CFU) to support offshore helicopter operations during the drilling campaign.

The hangar will be used exclusively for helicopter staging, parking, and routine servicing during the offshore exploration drilling campaign. Its installation will not expand the airport's footprint or alter its existing operational role or capacity. The temporary hangar will be removed following completion of drilling activities.

### 6.5 Drilling Preparation and Mobilisation Phase

#### 6.5.1 Installation and Setup of Onshore Facilities

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A temporary onshore logistics base (Supply Base) will be established within an existing operational area of the Port of Igoumenitsa to support the offshore drilling campaign. The facility will be fully operational before the arrival of the offshore drilling unit to ensure that all required infrastructure, equipment, procedures and personnel are in place to support safe and efficient drilling activities.

The establishment of the Supply Base will utilise existing port infrastructure and services and will not require the construction of new permanent facilities. Preparatory activities may include the temporary allocation and demarcation of operational areas, installation of portable office units, positioning of storage containers and material-handling equipment, establishment of designated storage and laydown areas, installation of temporary fencing and security arrangements, where required, and connection to existing utility services, such as electricity and water. Minor site preparation activities may be undertaken to organise operational zones and traffic management arrangements; however, no dredging, land reclamation, quay modifications or other substantial civil works are anticipated.

Operational areas within the Supply Base will be organised to facilitate the safe segregation of materials, equipment, vehicle movements and personnel. Dedicated areas may be designated for cargo staging, tubular storage, container storage, waste management, quarantine storage and loading/offloading activities adjacent to the quayside. The final layout and configuration of the Supply Base may vary depending on operational requirements, contractor arrangements and port authority requirements. In any case, they will remain within existing authorised port areas and will not alter the overall scope or environmental footprint of the Project.

A temporary helicopter hangar will be installed within the existing infrastructure of Corfu International Airport (CFU) to support offshore aviation activities during the drilling campaign. The hangar will be installed prior to the commencement of offshore operations by an airport-approved contractor, in accordance with all applicable airport procedures, aviation safety requirements and permitting conditions.

The temporary hangar will provide sheltered facilities for helicopter parking, routine inspection, maintenance support, equipment storage and operational preparation associated with crew transport and emergency response activities. Installation activities are expected to involve the assembly of prefabricated structural components and connection to existing airport utility services where required. No expansion of the airport boundary, runway infrastructure, apron areas or aviation facilities will be necessary. The temporary installation will be located within an area already designated for aviation-related activities and will operate in coordination with airport management and air traffic control procedures.

Both the Supply Base and helicopter hangar will remain in place only for the duration of the drilling campaign. Upon completion of operations, all temporary facilities, equipment and materials will be removed, and the areas utilised by the Project will be left in the condition agreed with the relevant port and airport authorities. Consequently, the establishment of these facilities is expected to result in only temporary and localised effects within existing industrial and transportation infrastructure areas.

## 6.5.2 MODU Staging, Support Vessels, and Pre-Mobilisation Activities

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Before mobilising to the Asopus 1 well location, the drilling unit will complete pre-mobilisation and staging activities at a suitable port, shipyard, or offshore staging site. The final staging location is yet to be determined, but it will be an established facility equipped to support inspection, preparation, certification checks, and loading.

Pre-mobilisation activities will include all required regulatory, technical, and operational readiness checks before entering the operational area. These checks confirm that the drilling unit, its systems, and documentation comply with statutory, class, flag state, and Project requirements.

As part of the rig acceptance process, the MODU's pollution prevention and ballast water management arrangements will be verified, along with relevant documentation regarding the hull and biofouling management. The need for any inspection or corrective action will be determined through the applicable vessel-assurance process, considering the MODU's operating history, available records, applicable requirements, and relevant IMO guidance. Any required cleaning will be undertaken at a facility authorised for that activity.

Platform supply vessels from the Mediterranean region are expected to support the offshore exploration drilling campaign. Before commencing operations and being accepted on hire, support vessels will hold valid statutory and environmental certifications required under applicable international maritime conventions, including MARPOL and the Ballast Water Management Convention, as transposed into Greek law. They will undergo Project verification and acceptance to confirm vessel suitability, safety, and environmental performance.

The drilling unit will be loaded with required consumables and materials, such as fuel, water, equipment, and stores, before departing the staging location or, if appropriate, through the Project logistics chain after mobilisation. Equipment, materials, and consumables required for the drilling campaign may originate from multiple regional or international locations. The ESIA assessment of Project logistics is based on the transport activities undertaken through the Project supply chain and within the defined assessment boundary. Where applicable, items will be transported to the Igoumenitsa supply base using existing

transport routes, primarily via established road freight services and, where necessary, by coastal or regional marine transport.

Offshore drilling will begin only after the drilling unit arrives at the well location, completes required positioning and pre-spud checks, and meets all regulatory, operational, and safety requirements.

### 6.5.3 Mobilisation and positioning of the MODU

The drilling unit will mobilise to the Asopus-1 well location using its own propulsion system. Mobilisation activities will be limited to the transit of the MODU to the operational area, rig intake process until the rig is formally accepted on hire, and preparatory activities before the commencement of drilling operations.

Upon arrival at the operational area, acoustic positioning transponders will be temporarily placed on the seabed to support accurate station keeping; the transponders will be recovered at the end of operations. The MODU will then be ballasted to achieve its drilling operating draft, which improves stability, reduces susceptibility to wave-induced motions such as rolling and pitching and provides a stable platform for drilling operations. The MODU's position will be maintained using its dynamic positioning (DP) system, which controls thrusters based on satellite navigation and acoustic reference systems. No anchors will be deployed, and no anchor handling or anchor-related seabed disturbance will occur. Seabed interaction associated with the temporary positioning transponders will be minor and spatially confined, and the transponders will be recovered following completion of operations.

Before spudding the well, the MODU-deployed ROV will conduct a seabed inspection at the well location. If any previously unidentified seabed features or sensitivities are observed, the relevant authorities will be informed, as applicable. Any further investigation, avoidance measure or proposed adjustment to the well location will be reviewed against the spatial and technical basis of the Project and addressed in accordance with the applicable regulatory requirements before drilling commences.

## 6.6 Drilling Phase

### 6.6.1 Overview of the drilling process

The Asopus 1 exploration well will be drilled using established offshore exploration drilling practices, progressing sequentially from shallow seabed sections to the planned final depth. Well construction will be carried out in accordance with the Notification of Well Operations (NoWO) accepted by HEREMA before commencement of drilling, with well control and integrity maintained throughout the operation. The operations include:

- Riserless drilling of shallow top-hole sections, during which water-based drilling fluids and rock cuttings are discharged at the seabed; and
- Risered drilling, following installation of the marine riser and blowout preventer (BOP), during which drilling returns are routed to the MODU.

Figure 6-7 illustrates the drilling configurations used for the exploration well. It distinguishes between riserless drilling of shallow sections, where water-based fluids and rock cuttings are discharged directly to

the seabed, and risered drilling of deeper sections, where returns are routed to the MODU. On the MODU, drilling fluids are processed and conditioned for reuse, while drill cuttings and residual fluids are managed in accordance with the drilling-fluid system and applicable regulatory requirements.

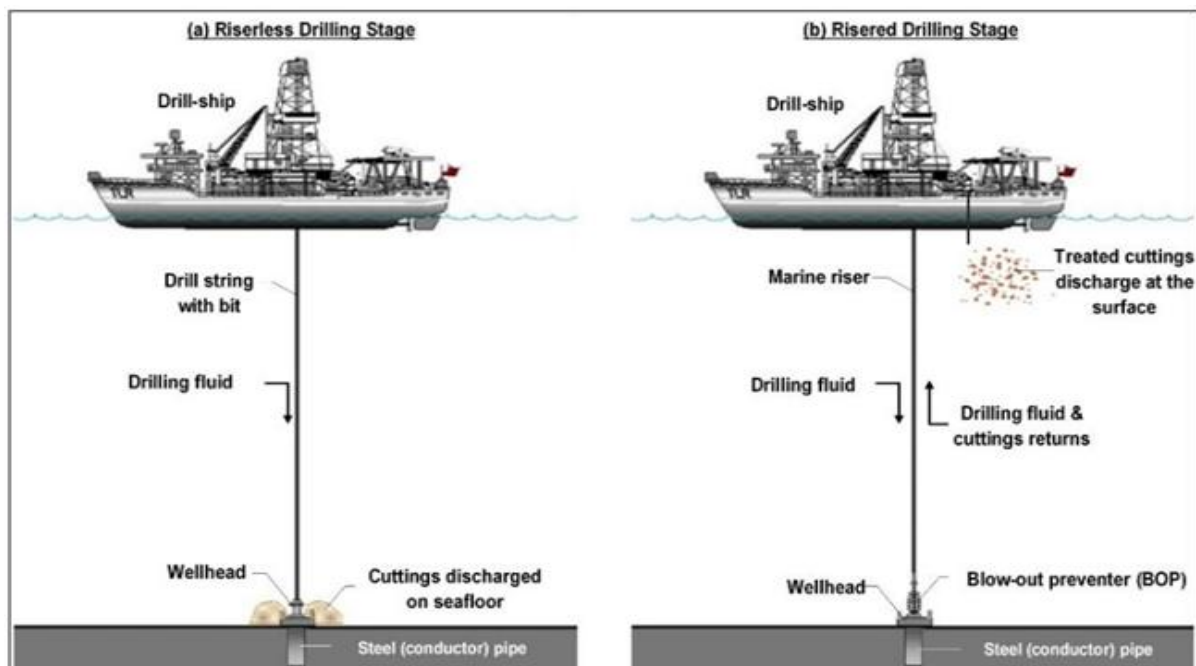


Figure 6-7: Main stages of drilling

Drilling will begin by jetting the 36-in conductor below the mudline using seawater and high-viscosity gel sweeps. This step establishes the well's structural foundation and will disturb approximately 0.66 m<sup>2</sup> of seabed. After installing the conductor, the 26-in hole section will be drilled with seawater and periodic gel sweeps. Before installing the 20-in surface casing, the system will be displaced to water-based mud (WBM), then the surface casing will be run and cemented. During these riserless sections, the drilling fluids and cuttings are discharged directly to the seabed near the well. Riserless drilling is limited to shallow sections above the depth where the blowout preventer (BOP) is installed.

After installing and cementing the 20-inch surface casing, the BOP will be deployed on the marine riser to establish a closed circulation system between the MODU and the well. The BOP provides secondary mechanical well control and enables the well to be shut in and secured if an influx occurs or the primary well barrier is lost. The BOP and its connection will be tested and verified before drilling operations continue.

The closed-loop circulating system enabled by the riser will allow fluids and cuttings to be processed using the rig's solids control equipment, including shale shakers and centrifuges. Drilling fluids may be conditioned and reused, while cuttings and residual fluids will be managed in accordance with the drilling fluid system in use and applicable regulatory requirements.

## 6.6.2 Well design

The well construction sequence assessed in this ESIA is defined by the indicative casing schedule presented in Table 6-6, which sets out the sections, casing sizes, drilling fluid systems, and approximate depths used

to assess drilling discharges, seabed disturbance, and contingency scenarios. Final casing setting depths and well design parameters will be confirmed during detailed well planning and within the approved NoWO.

**Table 6-6: Indicative well casing plan for Asopus-1 Base Case**

| NO. | SECTION NAME                                   | DRILLING FLUID | HOLE SIZE |     | CASING SIZE |     | DEPTH BELOW SEABED | LENGTH OF HOLE SECTION |
|-----|------------------------------------------------|----------------|-----------|-----|-------------|-----|--------------------|------------------------|
|     |                                                |                | IN        | MM  | IN          | MM  | M MD               | M                      |
| 1   | 36-in Conductor Jetting                        | Seawater / WBM | -         | -   | 36          | 914 | ±70                | ±70                    |
| 2   | 26-in Hole x 20-in Surface Casing              | Seawater / WBM | 26        | 660 | 20          | 508 | ±730               | ±660                   |
| 3   | 17-1/2-in Hole x 13-5/8-in Intermediate Casing | WBM            | 17-1/2    | 444 | 13-5/8      | 346 | ±1,212             | ±482                   |
| 4   | 12-1/4-in Hole x 9-5/8-in Intermediate Liner   | WBM            | 12-1/4    | 311 | 9-5/8       | 245 | ±2,407             | ±1,195                 |
| 5   | 8-1/2-in Hole                                  | WBM            | 8-1/2     | 216 | -           | -   | ±3,750             | ±1,343                 |

Based on the current well design, the drilling sequence comprises:

- Mobilise the drilling rig within the operational area. Prepare to start drilling (spud).
- Jet the 36-in conductor.
- Drill ahead the 26-in hole section. Run and cement the 20-in surface casing.
- Run the K-BOS on drill pipe.
- Run the BOP on the marine riser.
- Drill the 17-1/2-in hole section. Run and cement the 13-5/8-in intermediate casing.
- Drill the 12-1/4-in hole section - this section has a contingent wireline logging programme.
- Run and cement the 9-5/8-in liner.
- Drill the 8-1/2-in open-hole evaluation section and conduct wireline logging to evaluate the primary target. The interval will subsequently be isolated by the permanent abandonment barriers installed during P&A.
- Plug and abandon (P&A) the well using cement barriers.

The programme reflects a conservative exploration design based on current geological understanding. The final well design will be confirmed through detailed engineering and the NoWO process. Operational adjustments during well construction will remain subject to the approved well programme and applicable change-management and regulatory requirements. Any change that materially exceeds the environmentally relevant parameters assessed in this ESIA will be addressed in accordance with the applicable environmental permitting requirements.

The Project design envelope includes potential contingency activities, such as sidetrack drilling, re-drilling of individual sections, and re-spudding, should these be required in response to well conditions or operational circumstances. These activities are not part of the planned base case.

Well testing, flowback, and flaring are not included within the scope of the Project. No hydrocarbons, formation water or reservoir fluids will be intentionally flowed to the MODU for the purposes of well testing or production. Well-construction returns will be managed through the MODU's circulation, treatment and

well-control systems, as applicable. Any future proposal to conduct well testing would require separate regulatory submissions, environmental assessment, and approval.

### 6.6.3 Drilling

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Drilling operations commence with establishing a controlled well environment using the drilling fluid system to maintain hydrostatic pressure in the wellbore and prevent formation influx. During the riserless sections, seawater, viscous sweeps, water-based drilling fluids and cuttings are discharged at the seabed. After installation of the BOP and marine riser, water-based mud is circulated down the drill string and returned to the MODU via the marine riser, transporting drilled cuttings for processing through the solids control equipment. Conditioned drilling fluid is then recirculated where practicable to maintain stable wellbore conditions.

As drilling progresses, sections of the well are drilled sequentially to target depth intervals. Following completion of the applicable hole sections, the specified casing string or liner is installed and cemented in place. The conductor is jetted without cementing, and no casing string is currently planned for the final 8½-in hole section. Where applicable, cement slurry is pumped down the casing and returned through the annulus to secure zonal isolation, provide well integrity, and enable continued drilling into deeper formations. Pressure testing is conducted after cementing and casing installation to confirm integrity of the well barriers.

During drilling, well pressure will be managed primarily by controlling drilling-fluid density and hydrostatic pressure. If required by the encountered pressure conditions, MPD may be used to apply controlled surface backpressure and maintain bottom hole pressure within the defined operating limits.

If an influx of formation fluid into the wellbore occurs, the well will be secured using the BOP system in accordance with the applicable well-control procedures. Depending on the circumstances, the annular or ram preventers may be closed to shut in the well. The shear rams are available where shearing and sealing are required. Following shut-in, the influx may be circulated from the well in a controlled manner through the choke-and-kill system.

Where returns contain entrained gas, they may be routed through the mud-gas separator, where gas is separated and vented through the designated system, and the remaining fluids are managed through the MODU's fluid-treatment system, as appropriate.

Throughout drilling, operations are continuously monitored and controlled via integrated surface and subsea control systems, providing real-time feedback on pressure, flow, and well conditions. Emergency systems, including automatic shutdown, ROV intervention, and acoustic control, provide additional assurance that the well can be safely secured under a range of failure scenarios.

### 6.6.4 Cementing

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Cementing operations will be conducted following installation of each casing string to provide zonal isolation and mechanical support.

The conductor will be jetted without cementing. The 20-in surface casing will be cemented, with a planned excess volume to ensure full annular coverage and returns to the seabed. Cement returns to the seabed



may occur during cementing of the surface casing and have been included in the drilling-discharge assessment.

Subsequent cementing operations will be conducted with returns to the MODU through the marine riser. Excess cement may be circulated out during cleaning or contingency scenarios.

### 6.6.5 Formation Evaluation

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Following drilling of each relevant hole section, formation evaluation activities will be undertaken to characterise subsurface geology and assess the presence and properties of any hydrocarbons encountered. These activities are limited to data acquisition and interpretation and do not involve hydrocarbon production, flow testing, or flaring.

Formation evaluation for the Asopus-1 exploration well will include a combination of logging while drilling (LWD), mudlogging, biostratigraphy, and wireline logging. These techniques will be used to acquire continuous measurements of subsurface formations during and after drilling of selected hole sections. After drilling the last section, data acquisition is expected to require up to approximately 7 days, depending on well conditions and data quality.

The final combination of formation-evaluation techniques will be selected based on the data acquired, encountered well conditions and the remaining exploration objectives, within the Project envelope.

Upon completion of formation evaluation, logging tools will be recovered to surface, evaluation data will be reviewed on the MODU, and the well will proceed to permanent plug and abandonment. No field formation evaluation activities extend beyond the Project scope.

#### 6.6.5.1 Logging-while drilling (LWD)

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During drilling, LWD tools integrated into the drill string may be used to collect real time measurements, including gamma ray, resistivity, density, neutron porosity, and sonic properties. In parallel, mudlogging will be conducted at the MODU to analyse drill cuttings and drilling fluid returns. Mudlogging provides information on lithology, formation fluids, and gas content, and supports real time operational decision making.

#### 6.6.5.2 Wireline Logging (WL)

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Upon drilling a hole section of interest, wireline logging may be undertaken to acquire higher resolution formation data. Wireline tools may include, as applicable, Gamma Ray and Spectral Gamma Ray, Resistivity and Resistivity Imaging, Density and Neutron Porosity, Dipole Sonic, Nuclear Magnetic Resonance, Dielectric and Elemental Analysis Tools, VSP, Formation Pressure Reading and Sampling Tools, and Rotary Sidewall Coring.

Wireline logging is conducted with the well in a controlled, non-flowing condition. The operations will not involve continuous flow of reservoir fluids to the MODU or well testing. Where formation-fluid sampling is undertaken, small volumes may be captured within sealed downhole sampling chambers and recovered to the MODU with the wireline tool.

A zero-offset VSP survey may be conducted in up to two well sections. Each VSP operation will use a sound source array of approximately 750–1,000 in<sup>3</sup>, deployed approximately 5–10 m below the sea surface from the MODU. The source may fire up to five shots per station at approximately 15-second intervals. Each VSP operation is expected to last up to 12 hours and may comprise up to approximately 130 acoustic pulses, giving a maximum assessed total of approximately 260 pulses across the two potential VSP operations.

Formation-pressure measurements may be acquired using wireline tools to assess subsurface pressure conditions and fluid properties. Where fluid sampling is undertaken, only small, contained volumes will be captured within downhole sampling chambers. Any hydrocarbon sample recovered on the MODU will be handled in accordance with the applicable sampling and laboratory procedures. Small quantities of gas may be released during controlled sample handling or analysis; this does not involve continuous reservoir flow or constitute well testing.

Some LWD and wireline tools may incorporate sealed radioactive sources, such as Americium-Beryllium and Caesium-137, for density and neutron measurements. These sources are fully encapsulated and will be managed in accordance with the applicable source certification, transport, storage, handling and licensing requirements. Sources will be deployed and recovered with the logging tools and will not be intentionally released into the well or marine environment. Handling, storage, transport and use will comply with applicable Greek Atomic Energy Commission requirements and EU Directive 2013/59/Euratom.

## 6.6.6 Contingency Activities

In case technical or operational issues arise during drilling, contingency measures may be necessary. These activities are not part of the planned base case but have been considered within the ESIA contingency envelope where relevant. If undertaken, they may increase operational duration, drilling-fluid and cement use, cuttings and fluid discharges, and localised seabed disturbance compared with the planned well programme.

- Re-Spudding may be necessary if issues arise that make it impractical to continue drilling the current well. Causes include downhole failure or construction outside tolerance, such as excessive conductor inclination. Re-spudding is most often required during riserless operations, where remediation options are limited. A re-spud would generate additional cuttings and drilling-fluid discharges and may require additional cement, depending on the stage at which it is undertaken.
- Sidetrack (as an alternative to a well re-spud) involves drilling a secondary wellbore away from the primary wellbore to bypass unusable or inaccessible sections. A sidetrack may be required to bypass an unusable or inaccessible section of the original wellbore, respond to downhole mechanical problems, or achieve the well objectives where the original trajectory cannot be continued.
- If required, the initial hole will be abandoned in accordance with regulations and good industry practices using cement plugs. A higher-density cement plug or a downhole kick-off tool (whipstock) will separate the new wellbore from the original. A window may be milled into the original casing to create an opening for the new wellbore, and the drilling assembly will be guided through this window to continue drilling. Subsequent activities may follow the original wellbore plan. If required, a sidetrack would remain associated with the Asopus-1 exploration well within Block 2. Its implementation would be subject to the approved well programme, applicable management-of-change procedures and any regulatory

notification, acceptance or environmental-permitting requirements arising from the proposed change.

- Temporary interruption of operations may be required during the drilling campaign due to adverse weather, equipment issues, or other operational circumstances. Where disconnection from the well is required, the well will be secured using the applicable well barriers and disconnect procedures before the MODU moves off location. Operations may resume once conditions allow and the applicable operational and regulatory requirements have been satisfied. Long-term suspension is not part of the Project scope assessed in this ESIA; following completion of drilling and formation evaluation, the well will be permanently plugged and abandoned.
- A contingent Emergency Disconnect Sequence (EDS) may be initiated in the unlikely event the MODU needs to rapidly disengage from the well (e.g., due to severe weather). The sequence secures the well through the applicable BOP functions before disconnection of the lower marine riser package. Activation may result in the release of some riser contents, including drilling fluid and entrained cuttings, to the marine environment.
- Fluid loss to formation will be managed using loss circulation material (LCM) such as polymers or other additives to maintain the stability of the wellbore. For severe fluid loss, it may be necessary to pull back, cement the affected area, and then drill through the cement to resume operations.
- Contingent Cementing Operations may be necessary as contingent measures in response to unplanned events, such as kick-off plugs, failed formation integrity tests, or lost-circulation remediation.
- Explosives may be maintained onboard in limited quantities as a contingency measure for mechanical pipe severance (for example in stuck-pipe scenarios). No Tubing-Conveyed Perforating (TCP) or other reservoir-targeting explosive operations are planned for the Asopus-1 campaign. The charges are precision-engineered, self-contained devices designed to focus energy inward on the drill string. Their use is not expected to result in a routine chemical discharge to sea. Tool components and severed tubulars will be recovered where operationally practicable, while any unrecovered material will be managed in accordance with the applicable operational and regulatory requirements. The types and quantities of explosive cutting tools held onboard, and their storage, handling, and use, will be controlled in accordance with applicable legal requirements, vessel procedures, and specialist-vendor arrangements.

## 6.6.7 Spill Prevention and Response

Measures to prevent and respond to accidental releases of fuels, oils and chemicals from the MODU and support vessels are addressed through the applicable vessel safety and environmental management systems and Project emergency response procedures. These arrangements include operational controls, appropriate containment, spill-response equipment, trained personnel, notification requirements and product-specific response information.

Response to oil pollution incidents will be undertaken in accordance with the applicable vessel Shipboard Oil Pollution Emergency Plan (SOPEP). Releases involving other chemicals will be managed through the relevant vessel and Project emergency procedures, taking account of the substance involved, its Safety Data Sheet and the nature and scale of the release. These arrangements will be implemented in accordance with

applicable international, EU, Greek, flag-State, and port-State requirements and will be supported by the relevant drills and exercises.

## 6.6.8 Logistics support and transport activities

Support activities for the Asopus 1 exploration drilling programme comprise marine logistics, aviation support, and remotely operated vehicle (ROV) operations. These activities are limited to the duration of the drilling campaign, for which the quantified assessment is based on an offshore campaign of approximately 67 days.

The logistics envelope presented in Table 6-7 is based on Project logistics and crew-change planning, and includes allowances for routine supply, mobilisation and demobilisation, short-notice requirements, staggered personnel movements, and weather-related rescheduling. The upper values represent the quantities used for the applicable environmental assessments

Marine and aviation movements are expressed as one-way transits and one way flight sectors, respectively. A vessel round trip therefore comprises two one-way transits, and a helicopter round trip between Corfu International Airport and the MODU comprises two one-way flight sectors.

In the unlikely event of an emergency, additional vessel or aircraft movements may be required to support medical, safety, spill response, or other emergency activities. Such unplanned movements cannot be predicted in advance and are therefore not included in the routine logistics envelope. They are considered qualitatively within the ESIA assessment of unplanned events and emergency response arrangements.

**Table 6-7: Summary of Quantified Marine and Aviation Activities**

| ACTIVITY                         | ASSESSED OPERATIONAL ENVELOPE                                    |
|----------------------------------|------------------------------------------------------------------|
| PSV transits                     | Up to 6 one-way transits per week                                |
| PSV campaign total               | Approximately 58–60 one-way transits                             |
| PSV total sailing distance       | Approximately 7,500–7,800 km                                     |
| Helicopter flights               | Approximately 12 one-way flight sectors per week (6 round trips) |
| Helicopter campaign total        | Approximately 115–120 one-way flight sectors                     |
| Helicopter total flight distance | Approximately 9,400–9,800 km                                     |

### 6.6.8.1 Shore base activities

The logistics area will operate within a defined leased or allocated area of the port, with access restricted to authorised personnel. Shore-base activities will be coordinated with the Port Authority and conducted in accordance with the established port operating procedures and applicable health, safety, security, traffic management and environmental requirements, as indicated in the approved Environmental Terms (Decision ΥΠΕΝ/ΔΙΠΑ/12891/794/17.03.2022). Materials will be stored and handled within designated areas using the applicable containment and segregation controls.

Shore base activities will be limited to the receipt, temporary storage, staging, load-out and onward transfer of items associated with the offshore exploration operations. These activities will include routine supply to

the MODU and the backloading of equipment, materials and segregated waste streams returned from offshore.

A range of drilling-related materials may be handled at the shore base in support of the exploration campaign. All activities will be conducted within an existing, permitted port facility and will not require the construction of new permanent infrastructure, modification of existing port facilities, dredging, or other seabed works. No liquid mud plant (LMP) will be installed at the onshore support facilities (Port of Igoumenitsa) for the proposed exploration activities.

#### 6.6.8.1.1 Storage of Well Equipment and Supplies

The Igoumenitsa Supply Base will provide temporary storage for drilling tubulars, wellheads, packaged chemicals, drilling consumables and other equipment required for the Asopus-1 campaign. Materials received from suppliers will be inspected, recorded and stored in designated laydown or storage areas before consolidation and loading onto PSVs.

No bulk liquid mud plant or permanent chemical-storage facility will be established at the Supply Base. The types and quantities of materials stored will remain within the limits and conditions established by the applicable port approvals and relevant Greek hazardous-material, fire-safety and environmental requirements. Chemicals and other materials presenting a potential release risk will be stored in designated areas with appropriate segregation and secondary containment, considering their form, classification, and storage requirements. Safety Data Sheets and inventory records will be maintained as applicable, and storage areas will be subject to routine inspection.

Cargo will be prepared and transferred using certified lifting equipment and established manifest, weight-control and lifting procedures. Equipment, materials and segregated waste streams returned from the MODU will be offloaded and temporarily staged in their designated areas. Equipment and reusable materials will be transferred to the relevant vendors or maintenance facilities, while waste will be transferred through licensed contractors to authorised recovery, treatment or disposal facilities, as applicable.

Project-specific temporary installations will be removed following completion of the drilling campaign.

#### 6.6.8.1.2 Waste Storage and Transfer

Waste generated offshore will be segregated at source, classified, packaged, and labelled according to the waste type and applicable transport requirements before being backloaded to the Supply Base. Hazardous and non-hazardous waste streams will be maintained separately to prevent cross-contamination and incompatible wastes will not be stored together.

On arrival at the Supply Base, waste containers and accompanying documentation will be checked before transfer to the designated temporary staging area. Any damaged, leaking, incorrectly labelled or otherwise non-compliant container identified during transfer will be contained and managed in accordance with the applicable vessel, shore-base and port procedures before onward transportation.

No long-term storage of Project waste is planned at the Supply Base. Waste will be staged temporarily for the period necessary to arrange onward transfer through licensed waste transporters to authorised recovery,

treatment or disposal facilities. Hazardous waste and liquid waste will be stored in designated areas using containment and segregation measures appropriate to the waste type.

Indicative waste streams managed through the Supply Base may include waste oils, oily materials, spent chemicals, paints and solvents, batteries, aerosols, clinical waste, electrical and electronic equipment, scrap metal, wood, glass, packaging, domestic waste and food waste. Each waste stream will be classified based on its composition and applicable waste-classification requirements.

Waste transfers will be supported by the classification, manifest, consignment and transport documentation required for the applicable waste stream and mode of transport. Dangerous goods will additionally be packaged, labelled and documented in accordance with the applicable transport requirements, including the IMDG Code for marine transport where relevant. Waste records will be maintained to provide traceability from offshore generation through to the authorised receiving facility.

Waste-handling personnel will receive training appropriate to their responsibilities. Spill-prevention and response arrangements will be applied during waste transfer and temporary staging, and any incident or non-conformance will be managed through the applicable shore-base and port procedures.

#### 6.6.8.1.3 Shore-based Transfers

Shore-based transfers will support the movement of equipment, materials, consumables and segregated waste streams between the Supply Base and the MODU. Materials received from suppliers will be checked against the applicable cargo documentation and directed to designated storage or staging areas before preparation for offshore transport.

At the quayside, cargo will be loaded onto and offloaded from PSVs using suitable certified lifting equipment, trained personnel, cargo manifests, weight-control arrangements and applicable lifting procedures. Equipment and reusable materials returned from the MODU will be transferred to the relevant vendors or maintenance facilities. Waste will be temporarily staged and transferred to authorised recovery, treatment, or disposal facilities through licensed contractors, as applicable.

Transfer activities will apply containment and spill-response controls appropriate to the materials handled. Vehicle access, cargo movements, and quayside activities will be coordinated with the Port Authority and managed in accordance with the applicable port safety, security, traffic management, and environmental procedures.

#### 6.6.8.2 Marine Logistics – Support Vessels

Marine support will be provided by two PSVs operating on an alternating basis between the MODU and the Igoumenitsa Supply Base. A maximum of two PSVs may operate within the operational area at any one time. No dedicated standby vessel is planned for routine operations. Emergency response will be supported by the MODU, available PSVs, aviation support and the Project's emergency response arrangements.

Marine logistics activities will be conducted in accordance with applicable international and national requirements, including the MARPOL Convention, relevant provisions of the Barcelona Convention and its Offshore Protocol, and the Project's Environmental Terms, once issued under Law 4014/2011.



The well is located approximately 130 km (70 nautical miles) from Igoumenitsa along established navigation routes. The typical one-way PSV transit time is approximately seven hours under normal operating conditions.

The logistics plan is based on alternating PSV runs, with one vessel potentially present at or near the MODU while the other transits to or from the Supply Base. For assessment purposes, up to six one-way PSV transits per week have been assumed, including allowance for mobilisation and demobilisation, urgent logistics requirements, weather-related rescheduling and occasional overlap of PSV operations. Over the 67-day offshore campaign, this corresponds to approximately 60 one-way transits and a total assessed sailing distance of approximately 7,600 km.

Bulk materials such as cement and barite/bentonite will be transported as dry bulk and pneumatically transferred from the PSVs to storage tanks on the MODU. These transfers will use closed transfer systems, tank venting arrangements, and visual monitoring to minimise material loss.

Support vessels will use Marine Gas Oil or another compliant marine fuel with a sulphur content not exceeding 0.10% m/m, in accordance with MARPOL Annex VI and the Mediterranean Sea SOx Emission Control Area requirements.

#### 6.6.8.2.1 Refuelling

The MODU will be refuelled offshore from PSVs as required during the drilling campaign. Fuel transfer between a PSV and the MODU will be undertaken in accordance with the applicable vessel procedures and Project marine-operating requirements, including pre-transfer checks, communication between the vessels, monitoring of the transfer and spill-prevention and emergency-shutdown arrangements.

PSV refuelling will be undertaken in port using existing licensed fuel-supply arrangements. Fuel may be supplied directly at the quayside by road tanker or by an authorised third-party bunkering provider, subject to Port Authority requirements and the arrangements approved for the relevant berth. Refuelling may take place at the designated Supply Base quay or another approved operational berth within the port.

Fuel transfers will be undertaken in accordance with the applicable bunkering procedures, with controls appropriate to the transfer method. These will include confirmation of available tank capacity, verification of transfer connections and hose condition, agreed communication and emergency-stop arrangements, monitoring throughout the transfer, and availability of suitable spill-response equipment.

The quantity and frequency of PSV refuelling will depend on vessel schedules, offshore operational requirements and vessel fuel consumption. No Project-specific fuel storage facility will be established at the Supply Base; the Project will rely on the existing licensed fuel supply and bunkering arrangements available within the Port of Igoumenitsa and the wider regional marine fuel supply network.

#### 6.6.8.3 Helicopter support – Aviation services

Aviation support will involve helicopter operations between the MODU and Corfu International Airport. The well is approximately 82 km (44 nautical miles) from the airport, corresponding to a typical one-way flight time of 20–25 minutes for a twin-engine medium offshore helicopter, such as an AW139 class aircraft, under normal operating conditions. Helicopters will primarily support personnel transfers, including routine crew

changes, and may also be used for emergency response, including medical evacuation. Routine cargo-only flights are not planned.

Crew changes are expected to involve approximately 50–60 personnel per week. Flights may operate below their maximum passenger capacity because of staggered schedules, specialist personnel movements, baggage and payload constraints, meteorological conditions and operational requirements.

For assessment purposes, the aviation logistics envelope comprises approximately six round-trip flights per week, equivalent to 12 one-way flight sectors. This includes allowance for increased activity associated with mobilisation and demobilisation, short-term rescheduling and additional personnel movements. Over the 67-day offshore campaign, the assessed envelope comprises approximately 118 one-way flight sectors and a total flight distance of approximately 9,600 km.

Helicopter flight planning will be coordinated with Corfu International Airport and the relevant aviation authorities. Flight routes will be determined taking account of aviation safety, meteorological conditions, airspace requirements and air-traffic-control instructions. Where operationally practicable, unnecessary overflight of densely populated areas will be avoided. Routes may vary as required for safety, weather, air traffic control, or operational reasons.

## 6.7 Inputs of materials, energy, and water

### 6.7.1 Use of Chemicals

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The Asopus-1 offshore exploration drilling campaign will involve the use of a defined range of chemicals in accordance with Energean's HSE Management System and the applicable EU and Greek regulatory framework. These chemicals are required to support exploration drilling and general vessel operations.

In line with the Mediterranean Offshore Guidelines, the main categories include drilling-fluid chemicals, cement and cement additives, other well-construction chemicals, and chemicals used for routine vessel operations. The chemical inventory also includes identified contingency products that may be held onboard but are not part of the planned base case. Chemicals used solely for routine vessel operation and maintenance are managed separately through the vessel's chemical, waste and discharge-control arrangements.

#### 6.7.1.1 Chemical Selection and Environmental Considerations

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Only water-based mud systems will be used during the drilling campaign. These systems and their associated additives have been selected based on technical performance, well-integrity and safety requirements, and environmental characteristics, with preference, where technically feasible, given to products with lower toxicity, favourable biodegradability, and low potential for bioaccumulation.

In practical terms, chemicals have been selected through a screening process that considers:

- (i) intrinsic environmental hazard, using recognised classification schemes and hazard data,
- (ii) expected discharge quantities and exposure pathways,

- (iii) operational and safety requirements, and
- (iv) availability of technically feasible alternatives.

Where Mediterranean-specific chemical classification data are not available, internationally recognised systems such as OSPAR HOCNF and OCNS are applied as screening tools. These frameworks provide a conservative and well-established basis for environmental hazard assessment and are used to support, rather than replace, the requirements of the Mediterranean Offshore Guidelines.

The proposed chemical inventory, intended functions, usage status and maximum estimated quantities are presented in the Chemical Use Plan (**Annex 05**). The inventory includes products proposed for planned use and products retained for contingency use during the well programme. The inclusion of a product in the CUP does not necessarily mean it will be used. Chemical use will remain subject to the applicable HEREMA review and approval requirements. An indicative summary is presented in Table 6-8.

**Table 6-8: Indicative List of Chemicals**

| CHEMICAL                    | FUNCTION                         | PRIMARY /<br>CONTINGENCY<br>CHEMICAL | CHEMICAL FUNCTION<br>GROUP |
|-----------------------------|----------------------------------|--------------------------------------|----------------------------|
| <i>Riserless Section</i>    |                                  |                                      |                            |
| <i>Bentonite</i>            | Viscosifying agent               | Contingency                          | WBM additive               |
| <i>Caustic soda</i>         | Alkalinity control               | Primary                              | WBM additive               |
| <i>Soda ash</i>             | Water Hardness Control           | Primary / contingency                | WBM additive               |
| <i>PAC UL</i>               | Fluid loss control agent         | Primary                              | WBM additive               |
| <i>CMC HV</i>               | Fluid loss control agent         | Contingency                          | WBM additive               |
| <i>PAC R</i>                | Fluid loss control agent         | Primary                              | WBM additive               |
| <i>NaCl</i>                 | Salt - clay inhibition           | Primary                              | WBM additive               |
| <i>Barite</i>               | Weighting agent                  | Contingency                          | WBM additive               |
| <i>Defoamer</i>             | Defoamer                         | Contingency                          | WBM additive               |
| <i>Modified starch</i>      | Fluid loss control agent         | Primary                              | WBM additive               |
| <i>XC Polymer</i>           | Viscosifying agent               | Primary                              | WBM additive               |
| <i>Class G - Cement</i>     | Cement                           | Primary                              | Cement or Cement Additive  |
| <i>Defoamer</i>             | Defoamer                         | Primary                              | Cement or Cement Additive  |
| <i>Retarder</i>             | Retarder                         | Primary                              | Cement or Cement Additive  |
| <i>Potassium Chloride</i>   | Salt / shale-inhibition additive | Primary                              | Cement or Cement Additive  |
| <i>Silicate liq.</i>        | Extender                         | Primary                              | Cement or Cement Additive  |
| <i>Bentonite</i>            | Extender                         | Contingency                          | Cement or Cement Additive  |
| <i>C-dye</i>                | Dye / soluble tracer of returns  | Primary                              | Cement or Cement Additive  |
| <i>Riser-Based Sections</i> |                                  |                                      |                            |
| <i>Bentonite</i>            | Viscosifying agent               | Contingency                          | WBM additive               |
| <i>Caustic soda</i>         | Alkalinity control               | Primary                              | WBM additive               |

| CHEMICAL                                   | FUNCTION                              | PRIMARY /<br>CONTINGENCY<br>CHEMICAL | CHEMICAL FUNCTION<br>GROUP |
|--------------------------------------------|---------------------------------------|--------------------------------------|----------------------------|
| <i>Soda ash</i>                            | water hardness control                | Primary/ Contingency                 | WBM additive               |
| <i>PAC UL</i>                              | Fluid loss control agent              | Primary                              | WBM additive               |
| <i>CMC HV</i>                              | Fluid loss control agent              | Contingency                          | WBM additive               |
| <i>PAC R</i>                               | Fluid loss control agent              | Primary                              | WBM additive               |
| <i>NaCl</i>                                | Salt - clay inhibition                | Primary                              | WBM additive               |
| <i>KCl</i>                                 | Salt - clay inhibition                | Contingency                          | WBM additive               |
| <i>Barite</i>                              | Weighting agent                       | Contingency                          | WBM additive               |
| <i>Defoamer</i>                            | Defoamer                              | Contingency                          | WBM additive               |
| <i>Lignosulphonate (CF)</i>                | Thinner / deflocculant                | Primary                              | WBM additive               |
| <i>XC Polymer</i>                          | Viscosifying agent                    | Primary                              | WBM additive               |
| <i>Modified starch</i>                     | Fluid loss control agent              | Primary                              | WBM additive               |
| <i>H<sub>2</sub>S Scavenger</i>            | H <sub>2</sub> S Scavenger            | Contingency                          | WBM additive               |
| <i>Magnesium oxide</i>                     | Alkalinity control                    | Contingency                          | WBM additive               |
| <i>Sized CaCO<sub>3</sub> (all grades)</i> | Bridging / Loss circulation material  | Primary                              | WBM additive               |
| <i>Granular Fibre (all grades)</i>         | Loss circulation material             | Contingency                          | WBM additive               |
| <i>Acid Soluble fibres</i>                 | Loss circulation material             | Contingency                          | WBM additive               |
| <i>Nutshell (all grades)</i>               | Loss circulation material             | Contingency                          | WBM additive               |
| <i>Graphite</i>                            | Lubricant / Loss circulation material | Contingency                          | WBM additive               |
| <i>Biocide</i>                             | Biocide                               | Contingency                          | WBM additive               |
| <i>Oxygen Scavenger</i>                    | Oxygen Scavenger                      | Contingency                          | WBM additive               |
| <i>Surfactant</i>                          | Surfactant                            | Contingency                          | WBM additive               |
| <i>Class G - Cement</i>                    | Cement G                              | Primary                              | Cement or Cement Additive  |
| <i>NF-6</i>                                | Antifoam                              | Primary                              | Cement or Cement Additive  |
| <i>Silicate Liq</i>                        | Extender                              | Primary                              | Cement or Cement Additive  |
| <i>HR-4</i>                                | Retarder                              | Primary                              | Cement or Cement Additive  |
| <i>KCl</i>                                 | Salt                                  | Primary                              | Cement or Cement Additive  |
| <i>Bentonite</i>                           | Extender                              | Contingency                          | Cement or Cement Additive  |
| <i>C- Dye</i>                              | Dye / soluble tracer of returns       | Contingency                          | Cement or Cement Additive  |
| <i>Tuned Spacer E+</i>                     | Spacer Viscosifier                    | Primary (spacer)                     | Spacer Chemical            |
| <i>Barite</i>                              | Weighting agent                       | Primary                              | Cement or Cement Additive  |
| <i>Halad-300L</i>                          | Fluid Loss Additive                   | Contingency                          | Cement or Cement Additive  |
| <i>Latex 4000</i>                          | Fluid Loss Additive                   | Contingency                          | Cement or Cement Additive  |
| <i>HR-4L</i>                               | Retarder                              | Contingency                          | Cement or Cement Additive  |

| CHEMICAL                     | FUNCTION             | PRIMARY /<br>CONTINGENCY<br>CHEMICAL | CHEMICAL FUNCTION<br>GROUP |
|------------------------------|----------------------|--------------------------------------|----------------------------|
| <i>SCR-100L</i>              | Retarder             | Contingency                          | Cement or Cement Additive  |
| <i>HALAD-344</i>             | Fluid Loss Additive  | Primary                              | Cement or Cement Additive  |
| <i>HALAD-413</i>             | Fluid Loss Additive  | Primary                              | Cement or Cement Additive  |
| <i>GasStop</i>               | Gas Control Additive | Primary                              | Cement or Cement Additive  |
| <i>Econolite</i>             | Extender             | Primary                              | Cement or Cement Additive  |
| <i>SA-1015</i>               | Suspension Agent     | Primary                              | Cement or Cement Additive  |
| <i>CFR-3</i>                 | Dispersant           | Primary                              | Cement or Cement Additive  |
| <i>Surfactant for spacer</i> | Surfactant           | Primary                              | Spacer Chemical            |

**Note:** Table 6-8 provides an indicative summary of the drilling-fluid, cementing and spacer chemicals included in the Chemical Use Plan (**Annex 05**). The complete product inventory, including product-specific functions, primary or contingency status, environmental classification and maximum estimated quantities, is provided in the CUP, which also includes chemicals not reproduced in Table 6-8.

### 6.7.1.2 Storage

The Igoumenitsa supply base will be used for the temporary storage of well equipment and supplies, including drilling tubulars, wellheads, and other drilling equipment. Onshore storage at the Igoumenitsa supply base will temporarily hold packaged sack chemicals and drilling consumables during the campaign. This inventory capacity is logistically required to ensure operational continuity, given the base's distance from regional oilfield infrastructure.

The types and quantities of materials stored at the Supply Base will remain within the limits and conditions established by the applicable port approvals and relevant Greek hazardous-material, fire-safety and environmental requirements. Packaged chemicals and other materials that present a potential release risk will be stored in designated areas with appropriate segregation and containment, considering their form, classification, and storage requirements.

No bulk liquid mud plant or permanent bulk chemical-storage facility will be established at the onshore logistics base. Limited quantities of packaged chemicals and drilling consumables may be temporarily stored in designated areas to support offshore operations. Drilling chemicals will otherwise be stored and managed primarily onboard the MODU in the applicable bulk-storage tanks and designated chemical and sack-storage areas.

The main storage areas onboard the MODU are the paint store, chemical store and sack store, all of which have closed drains and are banded.

Chemicals stored and used for general vessel operation and maintenance (e.g. cleaning agents, boiler chemicals, water treatment products, and general-purpose lubricants and greases) are not included in the offshore chemical use inventory. These materials are typically used in small quantities and are managed under the vessel's MARPOL-compliant waste and discharge control systems.

Deck washing and cleaning activities are controlled to minimise discharge to the marine environment, with preference for collection and treatment through the vessel's drainage systems where practicable, in accordance with MARPOL requirements.

The Paint Store only stocks chemicals used for vessel maintenance, which are not discharged, as summarised in Table 6-9.

**Table 6-9 – Paint Store Inventories**

| CHEMICAL  | AVERAGE CONTENT (LT) | TYPE                                                                   |
|-----------|----------------------|------------------------------------------------------------------------|
| Thinners  | 700                  | Sigma 21-06, 91-92, and 20-05                                          |
| Paint     | 3,600                | Various types supplied by Sigma/PPG (Sigmaprime, sigmacover, sigmadur) |
| Hardeners | 210                  | Parts A and B associated with the paint systems stored onboard         |

The Chemical Store primarily stocks chemicals used for vessel operations, including rust removers (approximately 200 L), boiler chemicals (approximately 500 L), potable-water dosing chemicals (approximately 300 L), phosphoric acid (approximately 150 L) and various cleaning chemicals.

The Sack Store is primarily used to store chemicals for Mud Engineers and Cementers, in accordance with the applicable well programme and CUP accepted for the Project.

Storage facilities and storage containers will meet GIIP. All onboard chemical storage is conducted in accordance with established procedures, including the availability and use of Safety Data Sheets, segregation of incompatible substances, appropriate labelling, and the implementation of spill prevention and secondary containment measures. Storage areas are routinely inspected and subject to inventory control.

## 6.7.2 Water Use

Water demand for the Project will be met primarily through direct seawater use and freshwater produced onboard using the MODU's desalination systems. Seawater will be abstracted directly from the surrounding marine environment and used for the preparation and mixing of drilling fluids and cement slurries, in line with standard offshore practice and with the objective of minimising the use of freshwater resources.

Potable and service water for domestic, sanitary and selected operational uses will be produced on board using the desalination systems described below.

The desalination system comprises two reverse osmosis (RO) units, providing operational flexibility and redundancy. Under normal operating conditions, RO systems are used for routine freshwater production. These systems function by pumping seawater at high pressure through semi-permeable membranes, which allow water to pass while retaining dissolved salts, thereby producing freshwater and a concentrated brine stream.

A thermal evaporator is also installed to supplement water production and provide backup capability. This system operates on the principle of distillation, in which seawater is heated under reduced pressure, causing it to evaporate at relatively low temperatures. The resulting vapour is condensed to produce distilled water, while salts and other dissolved substances remain in the residual brine. The evaporator system is less



sensitive to variations in feedwater quality and provides additional reliability of supply.

Freshwater produced onboard will be used for domestic, sanitary and selected operational purposes. The combined use of RO and evaporator systems ensures a reliable supply of freshwater for operational and domestic use throughout the campaign, while minimising reliance on external freshwater transport.

The use of seawater for drilling and cementing significantly reduces reliance on onshore freshwater supply. The direct use of seawater for drilling fluid preparation avoids the need to produce an estimated 23,000 m<sup>3</sup> of additional freshwater using the MODU's desalination systems or to supply that volume from shore. This estimate is based on the total make-up-water requirement in the current drilling-fluid programme

Seawater will be used for machinery cooling, ballast water operations and as feedwater for the onboard desalination systems. Deck washing may use freshwater or seawater, depending on operational requirements. Ballast water quantities represent temporary seawater uptake and transfer, as it is subsequently discharged in accordance with the vessel's Ballast Water Management Plan and applicable requirements. Cooling water is circulated through onboard machinery and returned directly to the marine environment.

**Table 6-10: Estimated water uses on the MODU**

| WATER USE                                | AVERAGE CONSUMPTION (M <sup>3</sup> /DAY) | PEAK CONSUMPTION (M <sup>3</sup> /DAY)                                                     | SOURCE              |
|------------------------------------------|-------------------------------------------|--------------------------------------------------------------------------------------------|---------------------|
| Cooling water intake                     | 90,080.0                                  | 97,760.0                                                                                   | Seawater            |
| Water maker feed (1 × condensate system) | 1,224.0                                   | 1,224.0                                                                                    | Seawater            |
| Water maker feed (2 × RO systems)        | 190.8                                     | 190.8                                                                                      | Seawater            |
| Ballast water uptake <sup>47</sup>       | 22.0                                      | Up to ca. 28,000 m <sup>3</sup> as a one-off discharge during deballasting for rig release | Seawater            |
| Domestic freshwater production           | 90.0                                      | 230.0                                                                                      | Produced onboard    |
| Sanitary use / grey water                | 70.5                                      | 70.5                                                                                       | Freshwater use      |
| Boiler                                   | 0.5                                       | 15.0                                                                                       | Freshwater use      |
| Deck washing                             | 5.7                                       | 8.0                                                                                        | Freshwater/Seawater |

As a contingency measure, and to ensure continuity of operations and crew welfare, provision is made for the temporary supply of up to approximately 6,000 barrels (approximately 954 m<sup>3</sup>) of potable water from shore facilities in the unlikely event of prolonged unavailability of the onboard desalination systems.

<sup>47</sup> Subject to deckload and fuel use. Estimated to be 22 m<sup>3</sup> per day. Additionally, up to 28,000 m<sup>3</sup> are required to ballast from 12 m drilling draft to 8.5 m transit draft at the end of the well.

## 6.7.3 Energy Consumption

### 6.7.3.1 Offshore Energy Consumption

Offshore energy use, including fuel consumption by the MODU, support vessels, and helicopter operations, represents the dominant source of energy demand.

Fuel consumption is dominated by power generation and dynamic positioning requirements of the MODU. The assessment for the MODU uses an indicative conservative fuel consumption of 43 tonnes of marine gas oil per day (t/day) during drilling and dynamic positioning support, equivalent to 50-52 m<sup>3</sup>/day at a density of 0.85-0.86 t/m<sup>3</sup>. “Standby” and “Peak Case” fuel consumption estimates (Table 6-11) illustrate operational variability.

**Table 6-11: MODU Estimated Fuel Consumption**

| CONDITION        | ACTIVITY                | ESTIMATED FUEL (T/DAY) |
|------------------|-------------------------|------------------------|
| Average Case     | Drilling / Routine DP   | 43                     |
| <b>Peak Case</b> | Storm / High Current DP | 53                     |
| <b>Standby</b>   | Non-drilling / Calm     | 25                     |

The 43 t/day rate represents the conservative average operating basis used to calculate campaign fuel consumption and emissions. The 53 t/day peak rate represents short-duration operation during more demanding dynamic-positioning conditions and is not assumed to persist throughout the campaign.

All support vessels will operate using Marine Gas Oil (MGO), or other compliant fuels with a maximum sulphur content of 0.10% m/m, in accordance with MARPOL Annex VI and the Mediterranean Sea SO<sub>x</sub> Emission Control Area requirements.

Helicopter fuel consumption is based on the Swiss FOCA/BAZL Guidance on the Determination of Helicopter Emissions, which provides methods and indicative factors for jet fuel combustion by helicopter type. The FOCA/BAZL methodology is widely used as a conservative screening level approach when confirmed aircraft specifications are unavailable. In the absence of confirmed aircraft type and final logistics planning at the ESIA stage, the helicopter fuel consumption assumption represents a conservative upper bound estimate pending confirmation of helicopter type, flight distance and rotation frequency.

Activity data and fuel consumption assumptions for each source are summarised in Table 6-12 for the 67-day drilling campaign.

**Table 6-12: Activity Data and Fuel Consumption**

| FUEL TYPE                                    | FUEL USE                | ACTIVITY BASIS                                           | FUEL/DAY (T) | CAMPAIGN DAYS | CAMPAIGN FUEL (T) |
|----------------------------------------------|-------------------------|----------------------------------------------------------|--------------|---------------|-------------------|
| <b>MGO (0.10% S, Med SO<sub>x</sub> ECA)</b> | MODU                    | DP drilling / hotel load / auxiliary offshore operations | 43           | 67            | 2,881             |
|                                              | Support vessels (total) | Combined operations of the two Project PSVs              | 25           | 67            | 1,675             |
|                                              |                         | <b>Total</b>                                             |              |               | <b>4,556</b>      |

| FUEL TYPE | FUEL USE   | ACTIVITY BASIS                                                                 | FUEL/DAY (T) | CAMPAIGN DAYS | CAMPAIGN FUEL (T) |
|-----------|------------|--------------------------------------------------------------------------------|--------------|---------------|-------------------|
| Jet A-1   | Helicopter | Crew-change / logistics flights.<br>~ 118 one-way flight sectors /<br>9,600 km | 2            | 67            | 134               |

**Note:** The support-vessel estimate applies a combined fuel-consumption allowance of 25 t/day for the 67-day offshore campaign. This allowance covers transit, manoeuvring, time at or near the MODU, port operations, and other operational periods for the two Project PSVs. It does not represent the fuel consumption of an additional dedicated standby vessel.

### 6.7.3.2 Onshore Energy Consumption

Onshore energy consumption is limited to logistical support activities at the Project's shore base at the Port of Igoumenitsa and the use of existing aviation infrastructure at Corfu International Airport (CFU) for personnel transfer. These activities are temporary in nature and do not involve industrial processing or continuous high-energy operations.

Shore base activities will primarily involve logistical support, storage, and the handling of materials and equipment, with no industrial processing or other energy-intensive activities. The principal sources of energy use will comprise:

- Electricity supplied from the existing port grid to support administrative and operational functions.
- Diesel fuel used for mobile equipment used for loading, unloading and material handling activities, including cranes, forklifts and heavy goods vehicles.

Shore base equipment will be used intermittently for lifting and transport during mobilisation, supply support and demobilisation, utilising standard mobile plant typical of port logistics operations.

Electricity demand at the shore base is expected to be low and largely associated with office and logistical support functions. Lighting requirements are expected to be met through existing port infrastructure, such that no significant additional energy demand for lighting is anticipated.

Reliance on existing port infrastructure avoids the need for additional on-site energy generation or temporary energy supply systems. Where practicable, equipment use will be planned and coordinated to minimise fuel consumption and avoid unnecessary idling.

Fuel consumption at the Supply Base will be associated with the operation of diesel-powered cargo handling, lifting and transport equipment used to support vessel loading and unloading activities, material storage, and general logistics operations. As the final equipment selection and utilisation rates will be determined during detailed operational planning, fuel consumption estimates are indicative and based on typical performance characteristics of equipment commonly used in offshore drilling logistics bases.

The principal sources of fuel consumption are expected to be forklifts used for cargo handling, heavy vehicles transporting equipment and materials to and from the port, and a mobile wharf crane utilised during vessel mobilisation and cargo transfer operations. Light-duty vehicles may also be used for personnel transportation and operational support activities within the port area.

Table 6-13 presents indicative average daily fuel consumption estimates based on representative equipment utilisation rates. Actual fuel consumption will vary depending on equipment specifications, operational schedules, load factors, maintenance condition and the frequency of vessel supply operations.

**Table 6-13: Indicative Average Daily Fuel Consumption of Shore Base Equipment**

| EQUIPMENT                           | ASSUMED UTILISATION | AVERAGE FUEL CONSUMPTION | FUEL CONSUMPTION (L/DAY) |
|-------------------------------------|---------------------|--------------------------|--------------------------|
| Forklift (11 t capacity)            | 6 h/day             | 10 L/h                   | 60                       |
| Forklift (16 t capacity)            | 6 h/day             | 15 L/h                   | 90                       |
| Prime mover with 40 ft semi-trailer | 100 km/day          | 40 L/100 km              | 40                       |
| Heavy-duty truck (40 t capacity)    | 100 km/day          | 35 L/100 km              | 35                       |
| 4×4 pick-up vehicle                 | 80 km/day           | 10 L/100 km              | 8                        |
| Wharf crane (160 t capacity)        | 4 h/day             | 30 L/h                   | 120                      |
| <b>Total</b>                        |                     |                          | <b>353</b>               |

Fuel consumption estimates are based on representative equipment operating hours, travel distances and fuel consumption rates for equipment typically used in port logistics. These values represent indicative average operating conditions<sup>48</sup>. These estimates represent average operational conditions. Fuel consumption may be temporarily higher during peak mobilisation, demobilisation or vessel turnaround activities and lower during periods of reduced logistics demand.

Given the temporary nature of the Project and the use of existing port infrastructure, fuel consumption associated with shore base activities is expected to be modest and localised. Refuelling and fuel handling activities will be undertaken in accordance with applicable port procedures and the Project's health, safety and environmental management requirements to minimise the risk of fuel spills and associated environmental impacts.

The Project's use of existing airport infrastructure at CFU will be limited to routine personnel transfers and is not expected to materially increase energy consumption at the facility. Airport operations are already supported by established electricity and fuel supply systems, and the scale and frequency of Project-related movements are low compared with overall airport activity. As the Project will utilise dedicated helicopter services operating from existing airport infrastructure, no additional infrastructure or dedicated energy supply will be required. Any associated energy use (e.g. terminal operations, ground handling, and refuelling) will form part of the airport's normal operational baseline.

## 6.8 Wastewater and Discharges

Operational discharges from the MODU and associated support vessels will be managed in accordance with MARPOL (Annexes I, IV and V), the International Convention for the Control and Management of Ships' Ballast Water and Sediments, and the corresponding EU, Greek and flag-state implementing requirements, in a

<sup>48</sup> (1) EEA, EMEP/EEA Air Pollutant Emission Inventory Guidebook 2023, Chapter 1.A.4 Non-road Mobile Machinery.

(2) IPCC 2006 Guidelines for National Greenhouse Gas Inventories, Volume 2 Energy.

(3) Manufacturer technical specifications (Kalmar DCG100–180 Forklifts (110–170 kW engines), Liebherr LHM 280/420 Mobile Harbour Cranes (~300–350 kW installed power), Volvo FH / Scania R-Series heavy-duty trucks).

manner consistent with Greece's obligations under the Barcelona Convention and its Offshore Protocol (Section 5.2.3.9).

In line with the Offshore Protocol's principles of pollution prevention, source minimisation, and use of best available techniques where practicable, operational discharges will be limited to those necessary for safe operations. These discharges will meet predefined quality criteria and be managed through engineering controls, documented procedures, and monitoring. Given the limited discharge volumes, treatment before release, and the offshore environment's high dilution and dispersion capacity, no significant adverse environmental effects are expected on the marine environment.

A maximum of 2 support vessels may operate in the operational area at any time. Each support vessel will typically carry 12 to 18 persons on board (POB). The MODU will not exceed 180 POB and will average 160 during the campaign.

## 6.8.1 Offshore Wastewater and Discharges

### 6.8.1.1 Bilge and Deck Drainage Water

Bilge water generated within machinery and equipment spaces, together with contaminated deck drainage arising from precipitation, sea spray, equipment washdown, maintenance activities and fire system testing, may contain traces of oil and other operational residues. On the MODU, bilge water discharges are estimated to average approximately 4.5 m<sup>3</sup>/day (approximately 302 m<sup>3</sup> over the 67-day campaign), with intermittent peak discharges of up to 20 m<sup>3</sup>/day depending on bilge holding tank levels and operational requirements (Table 6-15).

Bilge water collected from machinery spaces will be routed to dedicated bilge holding tanks and processed through an approved oily water separator (OWS) equipped with a certified oil content monitor and an automatic stop device. Treated bilge water may only be discharged through the designated discharge outlet at approximately 12 m below sea level when the oil content of the undiluted effluent does not exceed 15 mg/L (15 ppm) and all applicable MARPOL Annex I discharge conditions are met. If the discharge specification is not met, overboard discharge will be stopped and the effluent will be retained onboard for further treatment or transfer to an authorised port reception facility. All bilge water handling and discharge operations will be recorded in the Oil Record Book.

Potentially contaminated deck drainage from drilling and operational areas is routed to dedicated collection and treatment systems prior to discharge or offloading in accordance with applicable vessel management procedures.

For hydraulic assessment of the drainage system, a representative wet-weather rainfall depth of 85 mm over 24 hours gives approximately 314 m<sup>3</sup>/day of rainfall runoff from the assessed 3,690 m<sup>2</sup> deck area. A peak rainfall scenario of 140 mm over 24 hours gives approximately 517 m<sup>3</sup>/day. Including deck washing, the corresponding assessed daily drainage volumes are approximately 320 m<sup>3</sup>/day and 525 m<sup>3</sup>/day, respectively. These are peak drainage system loads calculated for a wet day and are not assumed to occur on a typical day of the drilling campaign. Total campaign drainage will depend on the cumulative rainfall occurring during the offshore campaign – see Table 6-15.

Discharges occur through designated drainage outlets located above or close to the waterline. Potentially contaminated drainage will be retained or treated through the applicable vessel systems before discharge.

In accordance with MARPOL Annex I, Greek implementing legislation and the Barcelona Convention Offshore Protocol, bilge and deck drainage discharges will be managed to prevent pollution through the application of approved treatment systems, operational controls, inspection and monitoring procedures.

### 6.8.1.2 Boiler blowdown

Boiler blowdown discharge volumes are based on periodic boiler maintenance requirements and assume a single blowdown event of approximately 15 m<sup>3</sup> per month. For assessment purposes, a conservative total campaign volume of 36 m<sup>3</sup> has been assumed, equivalent to an average of approximately 0.54 m<sup>3</sup>/day over the 67-day offshore campaign. This daily value is an averaging convention; the discharge will occur intermittently rather than continuously.

### 6.8.1.3 Ballast water

Ballast water is used to maintain vessel stability, trim and operational safety and is stored within dedicated ballast tanks segregated from machinery and oily water systems. The principal environmental consideration associated with ballast water management is the potential transfer of non-indigenous marine species. Ballast water management will be undertaken in accordance with the Ballast Water Management Convention and vessel-specific ballast water procedures.

During normal drilling operations, ballast water discharges from the MODU are estimated to average approximately 22 m<sup>3</sup>/day and a one-off ballast discharge of approximately 28,000 m<sup>3</sup> is anticipated at the completion of drilling activities to enable the vessel to transition from its operational drilling draught to its transit draught before departing the well location. Thus, ballast water total discharge volume is approximately 29,474 m<sup>3</sup> over the campaign (Table 6-15).

Ballast water management will be undertaken in accordance with the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention), relevant EU, Greek and flag-state requirements, and the pollution prevention objectives of the Offshore Protocol. The MODU and PSVs will implement approved Ballast Water Management Plans, maintain Ballast Water Record Books and utilise certified Ballast Water Treatment Systems (BWTS) designed to meet the D-2 ballast water performance standard. Ballast water exchange to the D-1 standard may be used only as a contingency measure, where permitted under the approved management plan.

Treated ballast water will be discharged through dedicated ballast outlets located approximately 1 m below sea level (Table 6-15). Under normal operating conditions, all ballast discharges will comply with the applicable organism concentration limits specified by the D-2 standard, thereby minimising the potential for introducing non-native species or pathogens into the marine environment. Any ballast water that becomes contaminated with oil or hazardous substances under abnormal circumstances will be managed as contaminated water and will not be discharged until compliance with the applicable regulatory requirements can be demonstrated.



#### 6.8.1.4 Cooling water

Cooling water is required for the operation of engines, thrusters, auxiliary machinery and other onboard systems. Seawater is continuously abstracted from the surrounding marine environment, circulated through non-contact cooling systems and discharged back to sea after heat exchange. Cooling water represents the largest operational discharge stream from the MODU, with an estimated average discharge volume of approximately 90,080 m<sup>3</sup>/day and a maximum discharge volume of approximately 97,760 m<sup>3</sup>/day, resulting in an estimated total discharge of approximately 6.0 million m<sup>3</sup> during the drilling campaign (Table 6-15).

Cooling water is discharged through multiple outlets located between approximately 6 m and 12 m below sea level, including dedicated outlets associated with engine room cooling systems, machinery cooling systems and thruster cooling systems (Table 6-15).

Cooling-water systems are designed to prevent contact with oils and contaminated process streams. The discharge comprises non-contact seawater containing any residual cooling-water treatment chemical at the applicable operational concentration.

The cooling-water system uses a marine-growth prevention treatment at the seawater intake. The treatment chemical and dosing arrangement will be managed in accordance with the applicable vessel's chemical management procedures and regulatory requirements. The product will be applied at the operational dosage required to maintain cooling-system performance.

Cooling water is expected to be discharged at temperatures only marginally above ambient seawater conditions. The discharged water will rapidly mix with surrounding seawater, resulting in highly localised and temporary thermal effects. Given the absence of contamination, the modest temperature differential and the substantial assimilative capacity of the receiving environment, cooling water discharges are not expected to cause significant adverse environmental impacts.

#### 6.8.1.5 Fire control water

Fire detection, fire suppression and emergency response systems are installed on the MODU and support vessels to maintain operational safety and compliance with applicable maritime regulations. Under normal operating conditions, firefighting systems do not generate routine discharges. However, periodic inspection, maintenance and testing activities, together with any emergency deployment of firefighting systems, may result in the discharge of firewater to the marine environment.

Firefighting foams and other fire-suppression agents will be selected and managed in accordance with the applicable regulatory requirements and the specifications and certification of the vessel's fire-protection systems. The use of firefighting agents during testing will be minimised where feasible without compromising system integrity, certification, or emergency readiness.

Routine testing activities will be planned and managed to minimise discharge volumes. Any significant emergency firewater release will be addressed under the Emergency Response Plan (ERP), which will be formally submitted to the regulatory authority(ies) for approval as required. This will also include the implementation of spill response and regulatory notification procedures, where required. Routine testing is expected to generate only limited firewater discharge. Potential releases associated with an emergency are considered within the accidental-events assessment.

### 6.8.1.6 Discharges from Evaporation and Desalination units

Freshwater requirements onboard the MODU are met through one evaporator system and two reverse osmosis (RO) desalination units. Operation of these systems generates concentrated brine streams that are discharged to sea after dilution in the vessel's cooling water systems.

The evaporator system is estimated to discharge approximately 1,174 m<sup>3</sup>/day of combined brine and cooling water, equivalent to approximately 78,658 m<sup>3</sup> over the campaign.

The two RO systems together are estimated to discharge approximately 237.6 m<sup>3</sup>/day, equivalent to approximately 15,919 m<sup>3</sup> over the campaign.

Brine from the evaporator is discharged through an outlet located approximately 5 m below sea level, while RO brine is discharged through an outlet located approximately 12 m below sea level (Table 6-15).

Consistent with the general pollution prevention objectives of MARPOL and applicable Greek environmental requirements, brine streams are segregated from oily and contaminated systems, and desalination system discharges are operationally managed and monitored to ensure they do not contain oil or other harmful substances at concentrations likely to cause pollution of the marine environment. Prior to discharge, brine is mixed with substantially larger volumes of cooling water, reducing salinity and enhancing dispersion. The resulting discharge enters an open offshore environment approximately 44 km from the nearest shoreline, where rapid dilution and mixing are expected to occur.

Given the relatively small increase in salinity following dilution, the large receiving water volume and the rapid dispersion characteristics of the discharge plume, desalination brine discharges are expected to result only in localised and temporary salinity elevations.

### 6.8.1.7 Sanitary wastewater and Greywater

Sanitary wastewater comprises blackwater (sewage) generated from toilets and sanitary facilities and greywater generated from accommodation areas, including showers, wash basins, laundries and galley facilities. Treated sewage discharge volumes represent the combined effluent from the forward (two units) and aft (one unit) sewage treatment plants. Based on a maximum accommodation level of approximately 180 persons on board (POB), treated sanitary wastewater discharges from the MODU are estimated at 20.5 m<sup>3</sup>/day, equivalent to approximately 1,371 m<sup>3</sup> over the campaign (Table 6-15).

Greywater discharges are estimated at 45 m<sup>3</sup>/day, equivalent to approximately 3,015 m<sup>3</sup> over the campaign.

Blackwater is collected and treated in IMO-approved sewage treatment plants prior to discharge through dedicated outlets located approximately 12 m below sea level. Treatment systems are operated in accordance with manufacturer specifications and certification requirements to ensure compliance with MARPOL Annex IV effluent standards. Where treatment systems are unavailable, or treatment standards cannot be achieved, sewage will be retained in holding tanks and discharged only when compliant conditions are restored or transferred to authorised shore reception facilities.

Greywater is discharged through dedicated outlets located approximately 12 m below sea level. It is routed through the final stage of the sewage treatment system for treatment and disinfection prior to discharge, in accordance with the applicable MARPOL Annex IV requirements.

### 6.8.1.8 Other liquid waste

Other liquid wastes generated during drilling operations include waste lubricating oils, hydraulic oils, spent chemicals, paint residues, collected spill residues, cooking oils and similar hazardous or non-routine liquid wastes. These materials are classified as non-dischargeable wastes and will not be intentionally released to the marine environment.

Liquid wastes will be minimised where practicable, segregated according to waste type, stored in dedicated labelled containers or tanks incorporating appropriate secondary containment, and transferred ashore to licensed waste contractors for treatment, recovery or disposal at authorised facilities. Waste management procedures will ensure full traceability from generation through to final treatment or disposal in accordance with the Project Waste Management Plan, MARPOL requirements and applicable Greek legislation. Consequently, no routine environmental discharges are associated with these waste streams.

### 6.8.1.9 Summary of Wastewater and Discharges

Non-drilling discharges from the MODU and PSVs are controlled through established shipboard pollution-prevention systems and procedures forming part of the vessel and operator's safety and environmental management systems, with performance limits aligned with MARPOL, the Mediterranean Special Area requirements, and national implementing legislation, as summarised in the following Table 6-14.

**Table 6-14 – Non-Drilling Discharge Streams**

| DISCHARGE STREAM                               | SOURCE / DESCRIPTION                                                                                   | TREATMENT / CONTROL MEASURE                                                                                                                                                                       | DISCHARGE LIMIT / PERFORMANCE STANDARD                                                                                                                                                                                                                                                                                                         | APPLICABLE CONVENTION / STANDARD / CONTROL BASIS                                                                                              |
|------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| <b><i>Bilge water / oily deck drainage</i></b> | Oily mixtures from machinery spaces and any contaminated deck drainage on the MODU and support vessels | Collection in bilge tanks; processing through approved 15-ppm oily water separator (OWS) with oil content monitor and automatic stopping device; discharge conditions recorded in Oil Record Book | Discharge overboard only when the applicable MARPOL Annex I conditions are satisfied, and the oil content of the undiluted effluent does not exceed 15 mg/L. If the discharge criteria are not met, overboard discharge will be stopped, and the effluent retained for further treatment or transfer to an authorised port reception facility. | MARPOL Annex I, Regulation 15 (control of discharge of oil); approved 15-ppm oily water filtering equipment and Oil Record Book requirements. |

| DISCHARGE STREAM                                             | SOURCE / DESCRIPTION                                                                                        | TREATMENT / CONTROL MEASURE                                                                                                                                                                                                                                                                                                         | DISCHARGE LIMIT / PERFORMANCE STANDARD                                                                                                                                                                                                                                                                                                         | APPLICABLE CONVENTION / STANDARD / CONTROL BASIS                                                                                                                                                                                |
|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Ballast water</b>                                         | Seawater used in ballast tanks on the MODU and support vessels                                              | Implementation of an approved Ballast Water Management Plan; use of a certified Ballast Water Treatment System (BWTS) to meet the D-2 standard for ballast water discharges, with D-1 open-ocean exchange retained only as a contingency method where applicable; all ballast operations recorded in the Ballast Water Record Book. | Under normal operations, ballast water discharged only after treatment to meet the D-2 performance standard for living organisms; in exceptional circumstances, sequential ballast-water exchange to the D-1 standard may be used as a contingency measure in approved offshore areas, in line with the vessel's Ballast Water Management Plan | BWM Convention Regulations B-1, D-1, D-2 and D-3; approved Ballast Water Management Plan and Ballast Water Record Book.                                                                                                         |
| <b>Cooling water (non-contact)</b>                           | Non-contact cooling water from engines, thrusters and auxiliary systems                                     | Non-contact cooling system segregated from oily and contaminated drains; marine growth prevention treatment addressed below.                                                                                                                                                                                                        | Discharged as clean, non-oily water with no visible sheen, discoloration or floating solids; must not contain oil or harmful substances in quantities that would cause pollution                                                                                                                                                               | MARPOL general pollution-prevention obligation (Annex I/ Convention articles) for discharges free of oil and harmful substances; Greek environmental legislation on discharges free of oil/harmful substances.                  |
| <b>Cooling water with marine-growth-prevention treatment</b> | Seawater systems, including desalination pre-treatment, where biocides or corrosion inhibitors may be dosed | Treatment chemical applied at the operational dosage required to maintain cooling-system performance and managed under the applicable vessel chemical-management and regulatory requirements.                                                                                                                                       | Residual concentrations of biocides/additives in discharge kept within manufacturer, flag-state and permit-defined limits and at levels not expected to cause harmful effects; no visible pollution at discharge                                                                                                                               | Barcelona Convention Offshore Protocol; UNEP/MAP Common Standards and Guidelines for the Use and Disposal of Drilling Fluids and Cuttings and offshore chemicals in the Mediterranean; operator chemical management procedures. |

| DISCHARGE STREAM                                                | SOURCE / DESCRIPTION                                                                                                                                                                     | TREATMENT / CONTROL MEASURE                                                                                                                                                   | DISCHARGE LIMIT / PERFORMANCE STANDARD                                                                                                                                                                                                                      | APPLICABLE CONVENTION / STANDARD / CONTROL BASIS                                                                                                                                                |
|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Stena DrillMAX Desalination brine (1 evaporator + 2 ROs)</b> | Concentrated brine/reject from a thermal evaporator and two reverse osmosis plants producing freshwater                                                                                  | Brine kept segregated from oily and chemical systems; no deliberate addition of oil or harmful substances; operational controls minimise any pre-treatment chemical residuals | Discharged locally at the rig as a clean, high-salinity stream without oil or added harmful substances; expected rapid dispersion at open-sea location (~44 km from closest shoreline); no visible pollution                                                | MARPOL general pollution-prevention obligation for discharges that do not contain oil or harmful substances; Greek environmental legislation for discharges free of oil and harmful substances. |
| <b>Treated sewage</b>                                           | Blackwater from toilets and sanitary facilities; greywater from showers, wash basins, laundries and galley facilities is treated through the final stage of the sewage-treatment system. | Collection in sewage system; treatment in IMO-approved sewage treatment plant operated in accordance with its certificate; discharges logged in Sewage Record / PMS           | Discharge of treated sewage permitted only when the approved plant is operating and effluent quality meets IMO performance standards and flag-state criteria; otherwise retained on board for shore reception                                               | MARPOL Annex IV (sewage); IMO performance standard for sewage treatment plants; International Sewage Pollution Prevention Certificate / equivalent flag-state certification.                    |
| <b>Untreated / non-compliant sewage (contingent)</b>            | Sewage in case of treatment plant unavailability or non-compliance                                                                                                                       | Diversion to holding tanks; no planned overboard discharge; transfer to shore reception facilities at first opportunity                                                       | No routine discharge of untreated or non-compliant sewage; any exceptional discharge only under MARPOL Annex IV conditions (vessel en route, sufficient distance from land, moderate rate, Administration approval)                                         | MARPOL Annex IV, discharge conditions for untreated sewage; vessel sewage management procedures and holding-tank arrangements.                                                                  |
| <b>Waste oils, spent chemicals and liquid hazardous wastes</b>  | Lube and hydraulic oils, spent chemicals, paint residues, collected small spills and similar                                                                                             | Collection in dedicated tanks/containers; labelling and secure storage; transfer to licensed onshore waste contractors; no shipboard treatment for sea discharge              | No planned discharge to sea. These waste streams will be retained onboard and transferred ashore to authorised recovery, treatment or disposal facilities. Accidental releases are addressed through the spill-response and accidental-events arrangements. | MARPOL Annex I and Annex V prohibitions on disposal of oil and harmful substances at sea; Greek hazardous-waste legislation; company waste-management standards.                                |

**Note:** Greywater is routed through the final stage of the sewage-treatment system for treatment and chlorine disinfection before discharge. Greywater quantities are reported separately in Table 6-15.

Firewater discharges may occur during system testing or emergency response. Such discharges are infrequent and managed under the Project's emergency response procedures and chemical management systems, with notification and reporting as required.

Operational discharges from the MODU and support vessels are managed in accordance with established pollution-prevention and environmental management systems, consistent with applicable international and national requirements. Indicative discharge quantities, controls and applicable standards are summarised in Table 6-15.



Table 6-15: Summary of MODU Discharges

| NO. | DISCHARGE STREAM                 | SOURCE / DESCRIPTION                       | TREATMENT / CONTROL MEASURE                                       | DISCHARGE LIMIT / PERFORMANCE STANDARD                                       | AVG. DAILY VOLUME (M <sup>3</sup> /DAY)                    | MAX VOLUME (M <sup>3</sup> /DAY OR EVENT)                              | TOTAL VOLUME (67 DAYS)                                    | PIPE DIAMETER (MM) | DISCHARGE DEPTH (M) |
|-----|----------------------------------|--------------------------------------------|-------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------------------|-----------------------------------------------------------|--------------------|---------------------|
| 1   | Bilge water / oily deck drainage | Machinery spaces and contaminated drainage | Oily Water Separator (15 ppm OCM, auto shut-off, Oil Record Book) | ≤15 ppm oil; no visible sheen; MARPOL Annex I compliant discharge conditions | 4.5                                                        | 20.0                                                                   | 302                                                       | DN65               | +1 / -12            |
| 2   | Boiler blowdown                  | Boiler system purge                        | No treatment                                                      | No harmful substances; controlled discharge                                  | 0.5                                                        | 15.0                                                                   | 36                                                        | DN65               | -12                 |
| 3   | Drain system (deck runoff)       | Rainfall + deck washing                    | OWS for contaminated runoff (<15 ppm)                             | ≤15 ppm oil; no visible sheen                                                | Not applicable – rainfall dependent. Worst-case ref. 319.7 | ~ 525 m <sup>3</sup> /day under the assessed peak wet-weather scenario | Depends on actual cumulative rainfall during the campaign | —                  | +1 to -12           |
| 4   | Ballast water                    | Ballast tanks (MODU + support vessels)     | BWTS + Ballast Water Management Plan                              | D-2 standard (primary); D-1 exchange (contingency only)                      | 22                                                         | 28,000 (one-off transit discharge)                                     | 29,474                                                    | DN700              | -1                  |
| 5   | Cooling water (all systems)      | Engines, thrusters, machinery cooling      | Non-contact cooling; no oil contamination                         | No oil or harmful substances; no visible pollution                           | 90,080                                                     | 97,760                                                                 | 6,035,360                                                 | DN125–350          | -6 to -12           |
| 6   | Evaporator brine                 | Freshwater production (1 evaporator)       | Dilution with cooling water; segregated system                    | No oil or harmful substances; rapid dispersion                               | 1,174                                                      | 1,174                                                                  | 78,658                                                    | DN125              | -5                  |
| 7   | RO brine                         | Freshwater production (2 RO units)         | Dilution with cooling water; segregated system                    | No oil or harmful substances; rapid dispersion                               | 238                                                        | 238                                                                    | 15,919                                                    | DN125              | -12                 |
| 8   | Treated sewage (black water)     | Toilets, sanitary systems                  | IMO-approved sewage treatment plant                               | MARPOL Annex IV effluent standards                                           | 20.5                                                       | 20.5                                                                   | 1,371                                                     | DN50 / DN65        | -12                 |

| NO. | DISCHARGE STREAM | SOURCE / DESCRIPTION                | TREATMENT / CONTROL MEASURE                                                                                         | DISCHARGE LIMIT / PERFORMANCE STANDARD                          | AVG. DAILY VOLUME (M <sup>3</sup> /DAY) | MAX VOLUME (M <sup>3</sup> /DAY OR EVENT) | TOTAL VOLUME (67 DAYS) | PIPE DIAMETER (MM) | DISCHARGE DEPTH (M) |
|-----|------------------|-------------------------------------|---------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------|-------------------------------------------|------------------------|--------------------|---------------------|
| 9   | Greywater        | Showers, laundry, galley wastewater | Routed to the final stage of the sewage treatment plant for treatment and chlorine disinfection prior to discharge. | MARPOL Annex IV compliant discharge conditions where applicable | 45.0                                    | 45.0                                      | 3,015                  | DN200              | -12                 |

## 6.8.2 Onshore Wastewater

Sanitary facilities for shore base personnel will be provided by portable chemical toilets within the designated operational area of the Supply Base. The facilities will serve the small onshore workforce, expected to comprise up to six personnel during routine operations. The chemical toilets will be supplied, maintained and serviced by a licensed contractor at regular intervals to ensure hygienic conditions and adequate capacity. Waste collected from the units will be removed and transported to an authorised facility for treatment or disposal, as applicable, in accordance with national regulations and port requirements. Given the limited number of personnel and the temporary nature of the activity, wastewater volumes generated from these facilities are expected to be minor.

## 6.9 Waste and Discharges

### 6.9.1 Offshore Waste and Discharges

#### 6.9.1.1 Drilling Waste and Discharges

##### 6.9.1.1.1 Drill Cuttings and Drilling Discharges

Drilled cuttings will have 6-15% coating of drilling fluid; all well sections will use water-based mud (WBM). Although the UNEP/MAP Common Standards and Guidelines permit low-toxicity NADF in deeper sections with strict discharge controls, NADF will not be used or discharged for Asopus-1.

The drilling-fluid components are included in the Chemical Use Plan (CUP). Chemicals in the CUP are included to support specific drilling-fluid functions, including well-pressure control, wellbore stability, inhibition, viscosity, fluid-loss control and management of the temperature and geological conditions encountered during drilling. The CUP includes chemicals proposed for planned use and contingency chemicals that will be used only if required by the well conditions encountered. The inclusion of a chemical in the CUP does not necessarily mean it will be used.

Table 6-18 summarises anticipated discharges of drilling fluid and cuttings. The quantities are based on the current well design and drilling-fluid programme. The final well design and mud and cement programmes will be confirmed before drilling through the applicable well-planning and regulatory processes.

##### 6.9.1.1.1.1 Riserless Section – Seawater and WBM

Seawater combined with high-viscosity gel sweeps will serve as the drilling fluid for the initial conductor jetting and 26-in surface-hole section, with discharge at the seabed. The gel sweeps will contain water-based additives required to provide the necessary viscosity and fluid properties during riserless drilling. Cuttings and water-based drilling fluids will be discharged at the seabed during the riserless sections. Up to

approximately 490 tonnes of claystone and calcareous cuttings and approximately 1,318 tonnes of drilling fluids will be discharged during top-hole drilling (Table 6-18).

The riserless drilling fluids will comprise predominantly seawater, with water-based additives to provide the required viscosity, inhibition, and fluid-control properties. The planned additives include salts and water-soluble polymers. Weighting and viscosifying materials identified as contingency products in the CUP, including barite and bentonite, may be used only if required by the encountered drilling conditions. Product-specific compositions, primary or contingency status and maximum estimated quantities are provided in the CUP.

The discharge of WBM and cuttings at the seabed during the riserless sections has been assessed against the applicable requirements of the Barcelona Convention Offshore Protocol and relevant UNEP/MAP standards and guidelines.

#### 6.9.1.1.1.2 Risered Section – WBM

After completing the riserless sections, a marine riser and a blowout preventer (BOP) stack are installed to connect the well to the MODU and enable a closed-circulating system. The MODU's primary solids control equipment, including shale shakers and a centrifuge, removes cuttings from mud before recirculating the fluid back to the well.

Intermediate and target-hole sections will be drilled with water-based mud. Different shaker screen mesh sizes will be installed to remove specific particle sizes, thereby optimising drilling fluid properties.

Under normal operating conditions, cuttings associated with WBM are not expected to contain hydrocarbons at levels that would make them unsuitable for discharge and will be discharged in accordance with the applicable regulatory requirements. Discharged cuttings typically range from very fine particles of approximately 20 µm to coarse fragments of less than approximately 1 cm in diameter, following separation from the drilling fluid. The rate of cuttings discharge generally decreases with increasing well depth due to progressively smaller hole diameter and changes in penetration rate. Discharge will be intermittent because active drilling will not occur continuously while the MODU is on location.

Cuttings are discharged 12 m below the water line, while drilling mud is recirculated. For the base-case well design, up to 453 tonnes of calcareous and carbonate-based cuttings and 1,158 tonnes of drilling fluids may be discharged on the well sections drilled with a riser in place. A further discharge of 1,312 tonnes of drilling fluid may be conducted during the well plug and abandonment process (Table 6-18).

Drilling returns will be monitored through LWD, mudlogging and routine observation of the returned cuttings and drilling fluid. An LWD indication of a potentially hydrocarbon-bearing interval will inform monitoring and operational decision-making but will not, by itself, establish that the returned cuttings are contaminated with hydrocarbons. Where cuttings or drilling returns are identified as contaminated with reservoir hydrocarbons in concentrations that make them unsuitable for discharge under applicable requirements, discharge of the affected material will cease. The affected cuttings and fluids will be contained onboard and transferred ashore for management at an authorised facility.

Actual discharge quantities may vary depending on the final well depth and the drilling conditions encountered. The contingency envelope includes potential additional WBM and cuttings associated with lost

circulation, wellbore washout, re-spudding, sidetracking, re-drilling of individual sections and contingency casing strings. The estimated contingency quantities are presented separately in Table 6-19.

Table 6-16 – Estimated Drilling Fluids and Cuttings Discharges withing the Operational Area

|                                                                                 | Discharges while Drilling (continuous)                  |                     |                                  |                         |                    | Batch Discharge of WBM at End of Sections |                             |                                           |                                           |
|---------------------------------------------------------------------------------|---------------------------------------------------------|---------------------|----------------------------------|-------------------------|--------------------|-------------------------------------------|-----------------------------|-------------------------------------------|-------------------------------------------|
| Hole Section / Mud Type                                                         | Discharge Type, Location, Orientation                   | Interval Length (m) | Continuous discharge rate (m³/h) | Cuttings Discharge (MT) | WBM Discharge (MT) | Discharge Type                            | Batch Discharge rate (m³/h) | Emptying of Sand Traps Mud Discharge (MT) | Whole mud displacement WBM Discharge (MT) |
| 36" Conductor Jetting with seawater, gel sweeps, and PAD mud                    | Continuous, discharged at seabed, vertically upwards    | 70                  | 20.0                             | 82.7                    | -                  | -                                         | -                           | -                                         | -                                         |
| 26" Hole Drilling x 20" Casing & Cement, with seawater, gel sweeps, and PAD mud |                                                         | 660                 | 20.0                             | 407.0                   | 1317.7             | -                                         | -                           | -                                         | -                                         |
| 17-1/2" Hole Drilling x 13-5/8" Casing & Cement, with WBM                       | Continuous for cuttings. Discharged 12m below sea level | 490                 | 14.3                             | 152.1                   | 101.7              | Batch. Discharged 12m below sea level     | 76.3                        | 80                                        | 414.2                                     |
| 12-1/4" Hole Drilling x 9-5/8" Liner & Cement, with WBM                         |                                                         | 1400                | 14.3                             | 212.9                   | 111.7              |                                           | 76.3                        | 80                                        | 131.7                                     |
| 8-1/2" Hole Drilling with WBM                                                   |                                                         | 1090                | 7.2                              | 87.8                    | 43.5               |                                           | 76.3                        | 40                                        | 155.4                                     |
| Plug and Abandonment with WBM & seawater                                        | -                                                       | -                   | -                                | -                       | -                  |                                           | 76.3                        | 80                                        | 1232.1                                    |
| TOTAL                                                                           |                                                         |                     |                                  | 942.5                   | 1574.6             |                                           |                             | 280                                       | 1933.4                                    |

**Notes:** WBM = water-based mud, PAD = pump-and-dump mud, which is a type of water-based mud.



#### 6.9.1.1.2 Cementing discharges

The 36-in conductor will be jetted in without cementing. A 20-in surface casing string will then be installed and cemented using approximately 336 m<sup>3</sup> of slurry in the 26-in hole, with sufficient excess cement. Most of the slurry will remain within the casing–formation annulus. Cement returns to the seabed may occur during cementing of the surface casing.

For subsequent cementing operations, fluids will be returned to the MODU through the riser, as follows:

- The 13-5/8-in intermediate casing will be cemented. The anticipated top of cement is approximately 300 m below the 20-in casing shoe. Cement slurry will remain within the wellbore unless circulation or remedial action is required.
- The 9-5/8-in intermediate liner will be cemented, with the top of cement anticipated at the liner top. Residual cement and fluids containing cement above the liner top may be circulated to the MODU. Following treatment and management onboard, limited discharge may occur in accordance with applicable requirements. Cleaning the cementing unit may result in a further discharge. The total estimated routine surface discharge is approximately 15 m<sup>3</sup>.
- P&A may generate up to approximately 24 m<sup>3</sup> of cement or cement-contaminated fluid requiring management and discharge from the MODU (Table 6-18).

If a cementing operation must be terminated because of equipment failure, blocked lines or another operational problem, up to approximately 48 m<sup>3</sup> of cement slurry or cement-contaminated fluid may require discharge from the MODU. This represents a contingency case and is not part of the planned base-case discharge (Table 6-19).

#### 6.9.1.1.3 Pipe dope

Pipe dope (also referred to as thread compound) is a lubricating and sealing compound applied to threaded connections on drill pipe, casing and other tubulars during make-up and break-out operations. Its primary purpose is to reduce friction and galling, provide corrosion protection and help ensure pressure-tight connections during drilling operations.

The Project will use commercially available thread compounds selected in accordance with the Project's chemical management procedures (including review of Safety Data Sheets).

These compounds are classified as non-discharged chemicals during normal operations. However, minor incidental losses to the marine environment may occur, such as wash-off from the rig floor during cleaning or rainfall, or limited transfer to the wellbore during tripping.

Controlled application and good housekeeping practices will be used to minimise excess thread compound and incidental losses. Waste thread compound, contaminated materials and empty containers will be collected and transferred ashore as waste in accordance with the Project Waste Management Plan (Annex 04).

#### 6.9.1.1.4 BOP Discharges

Following installation, operation and testing of the subsea BOP, diluted hydraulic-control fluid may be released at the seabed. The hydraulic-control fluid is Stack Magic Eco V2, mixed with potable water at approximately 4.5% Stack Magic and 95.5% water by volume.

Planned operations are estimated to discharge approximately 21.2 m<sup>3</sup> of diluted hydraulic-fluid mixture. Including the assessed contingency operations, the maximum campaign total is approximately 42.9 m<sup>3</sup>, comprising approximately 40.97 m<sup>3</sup> of water and 1.93 m<sup>3</sup> of Stack Magic Eco V2 (Table 6-17). The maximum campaign total is equivalent to approximately 0.64 m<sup>3</sup>/day when averaged over 67 days; actual releases will occur intermittently rather than as a continuous daily discharge. A single rigid-conduit release may be up to approximately 18 m<sup>3</sup>. The discharge is conveyed through a pipe with a diameter of DN12 and is released at seabed level.

**Table 6-17: Estimation of BOP discharges**

| FUNCTION              | VOLUME (L) | FREQUENCY     |             | TOTAL VOLUME PER WELL (L) |               |                     |               |              |
|-----------------------|------------|---------------|-------------|---------------------------|---------------|---------------------|---------------|--------------|
|                       |            | Planned       | Contingency | Planned                   | Contingency   | Total               |               |              |
|                       |            |               |             |                           |               | Hydraulic Fluid Mix | Pot Water     | Stack Magic  |
| Accumulator Dump      | 2000       | 1             | 1           | 2,000                     | 2,000         | 4,000               | 3,820         | 180          |
| Failsafe (12 per BOP) | 3          | 400           | 400         | 1,200                     | 1,200         | 2,400               | 2,292         | 108          |
| Rigid Conduit volume  | 18,000     | 1             | 1           | 18,000                    | 18,000        | 36,000              | 34,380        | 1,620        |
| EDS                   | 500        | 0             | 1           | 0                         | 500           | 500                 | 478           | 22           |
|                       |            | <b>Totals</b> |             | <b>21,200</b>             | <b>21,700</b> | <b>42,900</b>       | <b>40,970</b> | <b>1,930</b> |

Stack Magic Eco V2 is water-soluble and biodegradable. At the assessed dilution of approximately 4.5%, operational releases will consist predominantly of water and will disperse after release from the subsea BOP system. The potential effects of the planned and contingency releases are assessed using the product characteristics, discharged quantity, dilution and receiving-environment conditions. The releases are expected to be localised and short-term.

#### 6.9.1.1.5 Summary of Drilling Discharges

Table 6-18 summarises the anticipated drilling discharges. It should be noted that seawater may also be discharged throughout the drilling process. Table 6-19 presents scenario-specific contingency discharges.

The discharge quantities presented in this section represent conservative upper-bound estimates based on the assessed design envelope. Actual discharge volumes may vary depending on final well design, drilling conditions and operational requirements.

**Table 6-18: Estimated Base-Case Drilling Discharges**

| DISCHARGE TYPE                                                                                | TYPICAL MAXIMUM QUANTITY                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Drilling Cuttings – Seabed Discharge <sup>49</sup>                                            | 189 m <sup>3</sup> / 490 tonnes                                                                                                                                                                                                                                                                      |
| Drilling Cuttings – Discharge 12m below sea level                                             | 174 m <sup>3</sup> / 453 tonnes                                                                                                                                                                                                                                                                      |
| Water-based Mud – Seabed Discharge                                                            | 1,156 m <sup>3</sup> / 1,318 tonnes                                                                                                                                                                                                                                                                  |
| Water-based Mud – Discharge 12m below sea level                                               | 2,058 m <sup>3</sup> / 2,470 tonnes                                                                                                                                                                                                                                                                  |
| Primary Cementing Operations                                                                  |                                                                                                                                                                                                                                                                                                      |
| Cement Slurry Seabed Discharge (riserless)                                                    | 64.6 m <sup>3</sup> / 155 tonnes (if returns at seabed are identified early)                                                                                                                                                                                                                         |
| Cement Slurry Surface Discharges from Residuals, e.g., testing, line flushing, excess volumes | 15 m <sup>3</sup> / 28 tonnes                                                                                                                                                                                                                                                                        |
| BOP Installation and Function Testing                                                         |                                                                                                                                                                                                                                                                                                      |
| BOP Hydraulic Fluids<br>Releases occur intermittently at seabed level.                        | Approximately 21.2 m <sup>3</sup> of diluted hydraulic-control fluid from planned operations.<br>The maximum planned-plus-contingency campaign envelope is approximately 42.9 m <sup>3</sup> , comprising approximately 40.97 m <sup>3</sup> of water and 1.93 m <sup>3</sup> of Stack Magic Eco V2. |
| Well P&A                                                                                      |                                                                                                                                                                                                                                                                                                      |
| Contaminated Cement Surface Discharge                                                         | 24 m <sup>3</sup> / 45 tonnes                                                                                                                                                                                                                                                                        |
| Non-displaced wellbore content                                                                | Left inside the well                                                                                                                                                                                                                                                                                 |
| Water-based Mud inside wellbore and riser before displacing to Seawater – Surface Discharge   | 1,150 m <sup>3</sup> / 1,312 tonnes                                                                                                                                                                                                                                                                  |

**Table 6-19: Drilling Discharges during contingency operations**

| CONTINGENCY ACTIVITIES                                                          | TYPICAL MAXIMUM QUANTITY | DISCHARGE AREA                     |
|---------------------------------------------------------------------------------|--------------------------|------------------------------------|
| Cuttings – Well re-spud (riserless / riser in place), m <sup>3</sup>            | 152                      | Seabed / From MODU below sea level |
| Cement – Well re-spud (riserless / riser in place), m <sup>3</sup>              | 35                       | Seabed / From MODU below sea level |
| Cuttings – Sidetrack <sup>1</sup> (riser in place), m <sup>3</sup>              | 174                      | From MODU below sea level          |
| Cuttings – Emergency Disconnect <sup>2</sup> (riser in place), tonnes           | 12.4                     | Seabed                             |
| WBM fluids - Emergency Disconnect <sup>2</sup> (riser in place), m <sup>3</sup> | 174                      | Seabed                             |
| Failed cement job / cement contamination (riser in place)                       | 48 m <sup>3</sup>        | From MODU below sea level          |

<sup>49</sup> Drilling returns will be monitored through LWD, mudlogging and observation of the returned cuttings and drilling fluid. Where cuttings or drilling returns are identified as contaminated with reservoir hydrocarbons such that they are unsuitable for discharge under the applicable requirements, discharge of the affected material will cease and it will be contained onboard for transfer ashore.

| CONTINGENCY ACTIVITIES                           | TYPICAL<br>MAXIMUM<br>QUANTITY | DISCHARGE AREA            |
|--------------------------------------------------|--------------------------------|---------------------------|
| Contingent Cementing Operations (riser in place) | 60 m <sup>3</sup>              | From MODU below sea level |

**Notes:** <sup>1</sup> Indicative based on a 12-1/4-inch sidetrack hole. The quantities represent scenario-specific upper-bound estimates. They are not expected to occur routinely and should not be summed as a single combined contingency discharge unless the underlying scenarios can occur cumulatively.

<sup>2</sup> Emergency-disconnect quantities represent the estimated riser contents released during the same assessed EDS event. Actual quantities will depend on the drilling phase and the contents of the riser when disconnection occurs.

### 6.9.1.2 MSW

Municipal solid waste (MSW) will be generated onboard the MODU and PSVs as a result of routine accommodation, catering, maintenance and operational activities. Waste streams are expected to include general domestic waste, paper and cardboard, plastics, metals, electrical and electronic waste, packaging materials and used cooking oil. Based on anticipated personnel levels and historical operational data, estimated waste generation during the drilling campaign includes approximately 1,200 kg of general non-recyclable waste, 1,520 kg of paper, wood and cardboard, 56 kg of plastics, 2,350 kg of metals, 375 kg of electrical waste and 75 kg of used cooking oil.

In accordance with MARPOL Annex V, the Mediterranean Sea Special Area requirements, Greek implementing legislation and the pollution prevention objectives of the Barcelona Convention Offshore Protocol, the discharge of plastics and other municipal or operational garbage to sea is prohibited, and other municipal and operational wastes will be retained onboard except where a specific discharge is permitted under MARPOL Annex V, as described for food waste in Section 6.9.1.3.

All MSW will therefore be managed under the vessel's approved Garbage Management Plan, with waste segregation undertaken at source to maximise opportunities for recycling, recovery and appropriate treatment. Waste materials will be collected in designated, clearly labelled containers, compacted where appropriate, and stored in enclosed waste handling areas to prevent littering, odour generation, and accidental loss to the marine environment.

All municipal and operational solid waste, including plastics, paper, cardboard, metals, packaging materials, waste electrical equipment, and used cooking oil, will be retained on board and transferred to authorised shore reception facilities via the project logistics chain. Waste will subsequently be managed by licensed waste contractors in accordance with applicable waste management regulations and the Project Solid Waste Management Plan (SWMP). No processing of these waste streams for overboard disposal will occur.

All waste transfers will be documented through the vessel's waste tracking procedures, including maintenance of the Garbage Record Book, to ensure traceability from generation through to final treatment or disposal. Personnel will receive appropriate training in waste segregation, storage and pollution prevention measures to minimise the risk of accidental releases to the marine environment.

### 6.9.1.3 Food waste

Food waste will be generated primarily from galley and catering activities associated with accommodation facilities onboard the MODU. Based on historical data from comparable drilling campaigns (1.05 kg per person per day, maximum 1.16 kg/person per day) and a maximum accommodation level of 180 persons on board (POB), food waste generation is estimated at approximately 189 kg/day, with a maximum generation rate of approximately 209 kg/day, resulting in an estimated total of approximately 12.7 tonnes over the 67-day drilling campaign.

Food waste will be managed in accordance with the vessel's Garbage Management Plan, MARPOL Annex V, the Mediterranean Sea Special Area provisions and applicable Greek regulatory requirements. Food waste will be segregated from other waste streams at the source and managed to prevent contamination by plastics, packaging materials, or other non-food waste. Where discharge is permitted under MARPOL Annex V requirements, food waste will first be macerated to a particle size of 25 mm or less and discharged only where the MODU is located beyond the applicable minimum distance from the nearest land. Discharges will occur through the vessel's dedicated food waste discharge system, located approximately 12 m below sea level.

Food waste may be discharged where the applicable MARPOL Annex V conditions are met. Where compliant discharge is not available or operationally practicable, food waste will be retained onboard and transferred to an authorised shore reception facility.

Given the biodegradable nature of food waste, the relatively small quantities involved compared with the receiving marine environment, compliance with MARPOL Annex V discharge requirements and the offshore location of drilling activities, significant adverse environmental effects from food waste management are not anticipated.

### 6.9.1.4 Hazardous Waste

Hazardous waste generated during drilling operations will primarily comprise machinery sludge, contaminated oil wastes, paints and solvents, and chemical wastes associated with maintenance and offshore drilling activities.

**Table 6-20: Hazardous waste streams during drilling operations**

| HAZARDOUS WASTE STREAM        | DESCRIPTION                                                                                                                                                                            | ESTIMATE D QUANTITY    | MANAGEMENT METHOD                                                                                    |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------------------------------------------------------------------------------------------------|
| <b>Sludge</b>                 | Oily sludge generated from machinery spaces, fuel purification systems, bilge water treatment, and maintenance activities                                                              | 3 m <sup>3</sup> /week | Collected and transferred to licensed onshore waste management facilities for treatment and disposal |
| <b>Oil contaminated waste</b> | Oil-contaminated absorbents, used filters, empty chemical or lubricant containers, contaminated hoses, and maintenance materials containing hydrocarbons or lubricants                 | 480 kg/week            | Segregated, stored onboard, and transferred to licensed onshore facilities for recovery or disposal  |
| <b>Paints and solvents</b>    | Residual marine coatings, epoxy and anti-corrosion paints, paint thinners, cleaning solvents, degreasers, contaminated paint containers generated during vessel maintenance activities | 150 kg/week            | Stored in designated hazardous waste areas and transferred to licensed onshore facilities            |

| HAZARDOUS WASTE STREAM | DESCRIPTION                                                                                                                                                                             | ESTIMATED QUANTITY | MANAGEMENT METHOD                                                                         |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------------------------------------------------------------------------------------|
| Chemical waste         | Spent, contaminated or unusable drilling chemicals, mud additives, cement additives and maintenance chemicals; waste hydraulic fluids, detergents and contaminated chemical containers. | 750 kg/week        | Collected separately and transferred to licensed onshore treatment or disposal facilities |

The quantities presented are indicative weekly generation estimates based on comparable vessel operations. Actual quantities will depend on maintenance activities, chemical use and operational conditions. Waste will be classified according to its composition and applicable waste-classification requirements before transfer ashore.

Hazardous waste will be segregated, temporarily stored in designated onboard storage areas, and transferred to licensed onshore waste management facilities for treatment, recovery, or disposal in accordance with applicable national and international waste management requirements.

## 6.9.2 Onshore Waste

Onshore activities will be limited to logistical support at the Project's shore base at the Port of Igoumenitsa, including storage, vessel support, and coordination activities. No industrial or maintenance works are planned at the shore base.

Waste received at the shore base will be temporarily stored in designated areas prior to transfer to licensed contractors, in accordance with site procedures and regulatory requirements for storage, handling and segregation.

Waste quantities are driven by logistical handling, storage and packaging activities and are consistent with the aggregated phase-based estimates presented in Table 6-21. Total quantities are based on indicative weekly generation rates, scaled to the project phase durations (mobilisation, drilling, and demobilisation).

At the onshore logistics base, a maximum of six personnel is expected to be present during operational activities. Municipal waste generated from routine office and welfare activities, including food packaging, paper products and general housekeeping waste, is conservatively estimated at approximately 10–12 kg/day. These wastes will be managed through the port's established waste management systems, including segregation, temporary storage and transfer to authorised waste management contractors for recycling, recovery or disposal.

All onshore wastes will be managed through the shore base waste management system and transferred to authorised facilities. Table 6-21 presents the waste expected to be generated by temporary shore-based logistics and welfare activities. It excludes waste generated offshore and backloaded through the Supply Base, which is reported separately in Sections 6.9.1.2–6.9.1.4. Backloaded offshore waste will be temporarily staged at the Supply Base but will not be counted again as onshore-generated waste.



Table 6-21: Estimated Non-Hazardous Waste

| WASTE STREAM                     | INDICATIVE WEEKLY GENERATION RATE (KG/WEEK) |                    |                | ESTIMATED TOTALS (KG)  |                              |                 |
|----------------------------------|---------------------------------------------|--------------------|----------------|------------------------|------------------------------|-----------------|
|                                  | MOBILISATION                                | OPERATIONS SUPPORT | DEMobilISATION | MOBILISATION (8 WEEKS) | OPERATIONS SUPPORT (67 DAYS) | DEMOB (8 WEEKS) |
| <i>General non-recyclable</i>    | 60                                          | 135                | 60             | 480                    | 1,290                        | 480             |
| <i>Paper, wood and cardboard</i> | 76                                          | 171                | 76             | 610                    | 1,640                        | 610             |
| <i>Plastic</i>                   | 5.6                                         | 8.4                | 5.6            | 45                     | 80                           | 45              |
| <i>Metal</i>                     | 117.5                                       | 176.3              | 117.5          | 940                    | 1,690                        | 940             |
| <i>Food waste</i>                | 28                                          | 63                 | 28             | 220                    | 600                          | 220             |
|                                  |                                             |                    | <b>Total</b>   | <b>2,300</b>           | <b>5,300</b>                 | <b>2,300</b>    |

## 6.10 Air emissions

Atmospheric emissions from the Project will primarily arise from fuel combustion by the MODU, support vessels, helicopters and other equipment used during operations. The main emissions are expected to be nitrogen oxides (NO<sub>x</sub>), sulphur oxides (SO<sub>x</sub>), carbon monoxide (CO) and particulate matter (PM), as well as greenhouse gases, including carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O).

The Stena DrillMAX is a DP3 ultra-deepwater drillship equipped with six Wärtsilä 16V32 diesel engines. These engines are certified to IMO Tier I NO<sub>x</sub> standards and are subject to routine inspection and maintenance in accordance with applicable statutory and class requirements. Emergency generators and lifeboat engines are excluded from the emissions inventory as they operate only under emergency or non-routine conditions and do not materially contribute to normal operational emissions.

No well test is planned as part of the Asopus-1 drilling programme. Accordingly, venting and flaring associated with well testing, hydrocarbon disposal or routine flare operations are not included within the planned project scope. Emissions management will therefore focus on combustion-source emissions, supported by optimised well design, a short drilling campaign, efficient power generation, logistics optimisation and preventative maintenance.

### 6.10.1 Air Emissions from Offshore Drilling Operations

#### 6.10.1.1 Regulatory Controls

Atmospheric emissions from the Project will be managed in accordance with the applicable Greek, European Union and international regulatory framework, including Law 4409/2016, MARPOL Annex VI and other relevant environmental and offshore regulatory requirements. In Greece, offshore upstream activities are regulated through the national hydrocarbons and environmental permitting framework under the oversight of the competent authorities and HEREMA.

The Mediterranean Sea Sulphur Emission Control Area came into effect on 1 May 2025 and requires ships operating in the area to use fuel with a sulphur content not exceeding 0.10% m/m. The MODU and support vessels will comply with these requirements by using compliant fuel and established fuel management and verification procedures.

The Stena DrillMAX, built in 2007, is subject to IMO Tier I NOx requirements under MARPOL Annex VI, Regulation 13. These requirements apply to qualifying marine diesel engines installed on ships constructed on or after 1 January 2000 and before 1 January 2011. The Mediterranean Sea Emission Control Area that entered into effect on 1 May 2025 applies to sulphur oxides and particulate matter and does not impose NOx Tier III requirements. Accordingly, the Stena DrillMAX remains subject to the applicable Tier I NOx requirements.

Atmospheric emissions for the project have been estimated according to International Maritime Organisation (IMO) guidance, using Stena DrillMAX's expected operating conditions, fuel consumption as calculated in Section 6.7.3.1, and the planned 67-day campaign. The assessment covers routine activities and includes combustion emissions from the MODU, support vessels, helicopter transfers, and ancillary equipment. Emission calculations take into account the specific fuels, engine certifications, and regulatory context of the Asopus-1 project, including the use of low-sulphur fuel and IMO Tier I NOx certified engines.

Marine source calculations assume a maximum fuel sulphur content of 0.10% m/m, in strict accordance with the Mediterranean SOx Emission Control Area (ECA) requirements effective from 1 May 2025. A sulphur content of 0.04% m/m has been assumed for Jet A-1 fuel, consistent with typical refinery specifications and international aviation fuel standards.

#### 6.10.1.2 Emission Calculations

Emission calculations are performed using the standard emission factors for Marine Gas Oil fuel from the European Environment Agency's emission inventory guidebook (*EMEP/EEA 2023, EMEP/EEA Air Pollutant Emission Inventory Guidebook, Technical guidance to prepare national emission inventories*, <https://www.eea.europa.eu/publications/emep-eea-guidebook-2023>).

Helicopter emissions are based on the Swiss FOCA/BAZL Guidance on the Determination of Helicopter Emissions, which provides methods and indicative factors for jet fuel combustion by helicopter type. The FOCA/BAZL methodology is not regulatory in Greece but is widely used in European ESIAs as a conservative screening-level approach in the absence of confirmed aircraft specifications.

In the absence of confirmed aircraft type and final logistics planning at the ESIA stage, the helicopter fuel consumption assumption represents a conservative upper-bound estimate pending confirmation of helicopter type, flight distance and rotation frequency. The helicopter emission factors and daily fuel use are conservative ESIA-stage estimates.

The emission factors applied in the assessment are summarised in Table 6-22.

Table 6-22: Emission Factors

| SOURCE (FUEL)                  | EMISSION FACTORS (KG/TONNE FUEL) |                 |      |                  |
|--------------------------------|----------------------------------|-----------------|------|------------------|
|                                | NOX                              | SO <sub>2</sub> | CO   | PM <sub>10</sub> |
| MODU and Support Vessels (MGO) | 72.20                            | 1.82            | 3.84 | 1.07             |
| Helicopter (Jet A-1)           | 18.00                            | 0.80            | 1.00 | 0.40             |

Source: Table 3-2, Tier 1 Emission Factors for Ships using Marine Diesel/Marine Gas Oil (EMEP/EEA, 2023)  
FOCA/BAZL "Guidance on the Determination of Helicopter Emissions", Edition 2 (2015)

Estimated daily emissions for each source are presented in Table 6-23, based on relevant emission factors (Table 6-22) and the activity data (fuel consumption) in Table 6-12.

Table 6-23: Estimated Daily Emissions

| SOURCE          | FUEL CONSUMPTION (T/DAY) | EMISSIONS (KG/DAY) |                 |       |                  |
|-----------------|--------------------------|--------------------|-----------------|-------|------------------|
|                 |                          | NOX                | SO <sub>2</sub> | CO    | PM <sub>10</sub> |
| MODU            | 43                       | 3,104.6            | 78.3            | 165.1 | 46.0             |
| Support vessels | 25                       | 1,805.0            | 45.5            | 96.0  | 26.8             |
| Helicopter      | 2                        | 36.0               | 1.6             | 2.0   | 0.8              |
| Total           |                          | 4,945.6            | 125.8           | 262.7 | 73.6             |

For the 67-day campaign, total emissions per source and pollutant are presented in Table 6-24.

Table 6-24: Total Emissions during Campaign

| SOURCE          | FUEL CONSUMPTION (T) | EMISSIONS (TONNES) |                 |       |                  |
|-----------------|----------------------|--------------------|-----------------|-------|------------------|
|                 |                      | NOX                | SO <sub>2</sub> | CO    | PM <sub>10</sub> |
| MODU            | 2,881                | 208.01             | 5.24            | 11.06 | 3.08             |
| Support vessels | 1,675                | 120.94             | 3.05            | 6.43  | 1.79             |
| Helicopter      | 134                  | 2.41               | 0.11            | 0.13  | 0.05             |
| Total           |                      | 331.4              | 8.4             | 17.6  | 4.9              |

### 6.10.1.3 Fugitive Emissions of Bulk Materials

Cement and barite are transported as dry bulk and pneumatically transferred from support vessels to MODU storage tanks using compressed air. Displaced air will be released through the tanks' venting and dust-control systems. These transfers will use closed-transfer systems, tank-venting arrangements, and visual monitoring to minimise material loss. Minor fugitive releases may occur through tank-venting systems during transfer.

## 6.10.2 Air Emissions from Onshore Activities

### 6.10.2.1 Air Emissions during Shore Base Establishment

The establishment of the temporary Supply Base will utilise existing port infrastructure and will not require major civil works, dredging, land reclamation or construction of permanent facilities. Consequently, air emissions associated with the setup phase are expected to be limited in scale, duration and spatial extent.

Minor combustion emissions, including nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), non-methane volatile organic compounds (NMVOCs) and particulate matter (PM), will arise from vehicles and equipment used to transport, unload and position temporary facilities and materials within the port area. Such equipment may include forklifts, trucks, cranes and light-duty vehicles. Given the limited duration of these activities and the use of an existing paved port facility, emissions are expected to be temporary and localised.

Dust generation during establishment activities is anticipated to be negligible as the Supply Base will be located on existing paved or hardstanding surfaces. No excavation, earthworks or bulk material handling activities are planned. Any minor dust generated by vehicle movements will be short-lived and confined to the immediate work area.

Overall, air quality impacts associated with the establishment of the temporary Supply Base are expected to be minor, temporary and readily manageable through standard good housekeeping practices and maintenance of vehicles and material-handling equipment in accordance with manufacturer specifications.

### 6.10.2.2 Air Emissions from Shore Base Operation

Air emissions from drilling support operations associated with the onshore logistics base at the Port of Igoumenitsa will arise from the intermittent use of diesel-powered logistics and cargo-handling equipment within the Port of Igoumenitsa, including forklifts, trucks, cranes and other mobile plant used for loading, unloading, staging and transferring materials and wastes. These activities will generate routine combustion-related emissions including nitrogen oxides (NO<sub>x</sub>), particulate matter (PM), carbon monoxide (CO) and small quantities of volatile organic compounds (VOCs).

SO<sub>2</sub> emissions are expected to be very low due to the use of diesel fuel complying with the applicable EU fuel-quality requirements.

For the emission calculations, standard emission factors for diesel fuel from the European Environment Agency's emission inventory guidebook for Non-road Mobile Machinery (Tier 1) were used (*EMEP/EEA 2023, EMEP/EEA Air Pollutant Emission Inventory Guidebook, Technical guidance to prepare national emission inventories*, <https://www.eea.europa.eu/publications/emep-eea-guidebook-2023>).

The emission factors applied in the assessment are summarised in Table 6-25.

**Table 6-25: Emission Factors**

| SOURCE (FUEL)                           | EMISSION FACTORS (KG/TONNE FUEL) |       |       |      |
|-----------------------------------------|----------------------------------|-------|-------|------|
|                                         | NOX                              | CO    | NMVOC | PM10 |
| Shore base equipment operation (Diesel) | 32.63                            | 10.77 | 3.38  | 2.10 |

**Source: Table 3-1, Tier 1 Emission Factors for off-road machinery (EMEP/EEA, 2023)**

Based on activity data and fuel consumption for the shore base supporting activities (Table 6-13), estimated daily emissions, as well as total emissions for the 67-day campaign, are presented in Table 6-26.

**Table 6-26: Estimated Daily Emissions and Total Emissions during Campaign**

| SOURCE                  | EMISSIONS (KG/DAY) |        |       |       |
|-------------------------|--------------------|--------|-------|-------|
|                         | NOX                | CO     | NMVOC | PM10  |
| Emissions (kg/d)        | 9.59               | 3.17   | 0.99  | 0.62  |
| Campaign Emissions (kg) | 642.45             | 212.13 | 66.49 | 41.43 |

As these activities will be temporary, of limited duration and undertaken within an existing port operational area, the resulting air emissions are expected to be localised and short term. Air emissions will be minimised through routine equipment maintenance, efficient logistics planning to reduce unnecessary engine idling and vehicle movements, and the use of standard good industry practice for port-based handling operations. On this basis, emissions from shore equipment are not expected to result in significant adverse effects on local ambient air quality, although they will contribute in a minor way to the overall Project greenhouse gas footprint.

## 6.11 Carbon footprint

The carbon footprint of the Project comprises greenhouse gas (GHG) emissions associated with:

- Offshore operations, including
  - Drilling operations using a Mobile Offshore Drilling Unit (MODU);
  - Offshore support vessel operations (Platform Supply Vessels);
  - Helicopter operations (if applicable for crew change and emergency response).
- Onshore logistics support operations at the Port of Igoumenitsa (Supply Base).

Emissions are classified in accordance with the GHG Protocol and the Project's organisational and operational-control boundary as follows:

- **Scope 1:** Direct emissions from fuel combustion, including fuels consumed for MODU, PSVs, helicopter operations, onshore vehicles and equipment.
- **Scope 2:** Indirect emissions associated with electricity purchased for shore base operations.
- **Scope 3:** Indirect logistics (e.g. suppliers, waste management operations by certified contractors).

Stena Drilling's Energy Management System conforms to ISO 50001:2018 standard. The MODU's voluntary DNV Abate (P) notation provides a recognised framework for efficient power plant operation and greenhouse gas emissions abatement. This notation is considered good industry practice and supports continuous improvement in emissions management performance beyond minimum regulatory requirement.

Regulation (EU) 2024/1787 on the reduction of methane emissions in the energy sector entered into force on 4 August 2024 and establishes monitoring, reporting and verification requirements, together with restrictions on venting and flaring and leak detection and repair obligations for in-scope oil and gas assets and activities. Given that no hydrocarbon flow, well testing or routine venting is planned, dedicated methane

LDAR obligations are not expected to be triggered for the Asopus 1 drilling scope. However, Energean will apply contractor management systems and incident reporting procedures to ensure that any unexpected methane releases from scoped in equipment are identified, recorded and reported in accordance with Regulation (EU) 2024/1787.

The DNV Abate (P) notation and contractor management systems may support good practice in emissions control, energy efficiency and incident management. However, compliance with Regulation (EU) 2024/1787 will be determined by the actual scope of in-scope oil and gas activities and equipment, rather than by voluntary vessel notations or certifications.

For offshore support vessels of 400 GT and above calling at EU ports, greenhouse gas monitoring, reporting, and verification requirements under the EU MRV regime apply from 1 January 2025, with reporting undertaken through the applicable EU MRV system, including THETIS-MRV, where applicable.

The applicability of the EU Emissions Trading System and FuelEU Maritime Regulation to third-party marine assets will be addressed by the relevant ship operators through their own compliance arrangements and is managed by the respective vessel operators through their own statutory compliance arrangements and therefore does not form part of the project-specific mitigation measures assessed in this ESIA.

GHG emissions from offshore operations including MODU, PSVs and helicopter operations (Scope 1), are calculated using the ISO 14064-1:2018 standard (Table 6-27), based on activity data (fuel consumption) in Table 6-12. Emission factors are taken from the following sources:

- Annual publication of the Greek Ministry of Environment and Energy for the implementation of the National Climate Law, which are based on the most recent national emissions inventory (<https://ypen.gov.gr/perivallon/klimatiki-allagi/ethnikos-klimatikos-nomos/efarmogi-ethnikou-klimatikou-nomou>) for the calculation of emissions from Stena DrillMAX and Support vessels.
- 2006 IPCC Guidelines for National Greenhouse Gas Inventories. Volume 2: Energy, Chapter 3: Mobile Combustion for the calculation of emissions from helicopter operations.
- **Direct emissions from the onshore supporting operations** (Scope 1), are calculated using the ISO 14064-1:2018 standard (Table 6-28), based on activity data (fuel consumption) in Table 6-13. Emission factors are taken from the Annual publication of the Greek Ministry of Environment and Energy for the implementation of the National Climate Law, which are based on the most recent national emissions inventory (<https://ypen.gov.gr/perivallon/klimatiki-allagi/ethnikos-klimatikos-nomos/efarmogi-ethnikou-klimatikou-nomou>) for the calculation of emissions from onshore mobile equipment.

According to the above, the total carbon footprint of the drilling campaign is calculated in Table 6-29.



Table 6-27: GHG emissions (Scope 1) from offshore drilling operations

| FUEL TYPE                              | FUEL USE                | CAMPAIGN FUEL (T) | NCV (TJ/TN) | ENERGY (TJ) | EF CO <sub>2</sub> (TN CO <sub>2</sub> /TJ) | CO <sub>2</sub> EMISSIONS (TN CO <sub>2</sub> ) | EF CH <sub>4</sub> (KG CH <sub>4</sub> /TJ) | CH <sub>4</sub> EMISSIONS (TNCO <sub>2</sub> EQ) | EF N <sub>2</sub> O (KG N <sub>2</sub> O/TJ) | N <sub>2</sub> O EMISSIONS (TNCO <sub>2</sub> EQ) | TOTAL EMISSIONS (TN CO <sub>2</sub> EQ) |
|----------------------------------------|-------------------------|-------------------|-------------|-------------|---------------------------------------------|-------------------------------------------------|---------------------------------------------|--------------------------------------------------|----------------------------------------------|---------------------------------------------------|-----------------------------------------|
| MGO (0.10% S, Med SO <sub>x</sub> ECA) | MODU                    | 2,881             | 0.04275     | 123.16      | 76.93                                       | 9,474.91                                        | 4.00                                        | 13.79                                            | 2.00                                         | 65.28                                             | 9,553.98                                |
|                                        | Support vessels (total) | 1,675             | 0.04275     | 71.61       | 76.93                                       | 5,508.67                                        | 4.00                                        | 8.02                                             | 2.00                                         | 37.95                                             | 5,554.64                                |
| Jet A-1                                | Helicopter              | 134               | 0.04410     | 5.91        | 71.50                                       | 422.52                                          | 0.50                                        | 0.08                                             | 2.00                                         | 3.13                                              | 425.74                                  |
| <b>Total</b>                           |                         |                   |             |             |                                             | <b>15,406.10</b>                                |                                             | <b>21.90</b>                                     |                                              | 106.36                                            | 15,534.36                               |

Table 6-28: GHG emissions (Scope 1) from onshore supporting operations

| FUEL TYPE | FUEL USE                 | CAMPAIGN FUEL (T) | NCV (TJ/TN) | ENERGY (TJ) | EF CO <sub>2</sub> (TN CO <sub>2</sub> /TJ) | CO <sub>2</sub> EMISSIONS (TN CO <sub>2</sub> ) | EF CH <sub>4</sub> (KG CH <sub>4</sub> /TJ) | CH <sub>4</sub> EMISSIONS (TNCO <sub>2</sub> EQ) | EF N <sub>2</sub> O (KG N <sub>2</sub> O/TJ) | N <sub>2</sub> O EMISSIONS (TNCO <sub>2</sub> EQ) | TOTAL EMISSIONS (TN CO <sub>2</sub> EQ) |
|-----------|--------------------------|-------------------|-------------|-------------|---------------------------------------------|-------------------------------------------------|---------------------------------------------|--------------------------------------------------|----------------------------------------------|---------------------------------------------------|-----------------------------------------|
| Diesel    | Onshore mobile equipment | 19.69             | 0.0428      | 0.84        | 73.23                                       | 61.71                                           | 5.57                                        | 0.13                                             | 1.58                                         | 0.35                                              | 62.20                                   |

Table 6-29: Total direct GHG emissions (Scope 1) from the drilling campaign (Offshore and onshore operations)

| CO <sub>2</sub> EMISSIONS | CH <sub>4</sub> EMISSIONS | N <sub>2</sub> O EMISSIONS | TOTAL EMISSIONS         |
|---------------------------|---------------------------|----------------------------|-------------------------|
| (tn CO <sub>2</sub> )     | (tnCO <sub>2</sub> eq)    | (tnCO <sub>2</sub> eq)     | (tn CO <sub>2</sub> eq) |
| 15,467.81                 | 22.03                     | 106.71                     | 15,596.56               |

For the purposes of this ESIA and the project carbon-footprint assessment, emissions from the MODU, project support vessels, helicopter services and shore-base support equipment are included in the project's Scope/Category 1 inventory, as these activities are necessary to execute the drilling campaign and fall within the project's environmental-permitting boundary. This presentation sets out an ESIA-specific project-boundary convention and shall not be construed as a determination of ownership, financial control, or operational control for Energean. It does not establish, amend or predetermine the classification of these emissions in Energean's corporate GHG inventory, sustainability reporting, assured disclosures or any other corporate emissions account. Such reporting shall remain subject to Energean's approved organisational boundary, contractual-control assessment and applicable corporate GHG-reporting methodology.

The results show that the carbon footprint of the drilling campaign is dominated by offshore fuel combustion, with the MODU and support vessels contributing the vast majority of Scope 1 emissions. Helicopter and onshore activities represent only a marginal share of total emissions.

CO<sub>2</sub> is the principal greenhouse gas, with smaller contributions from CH<sub>4</sub> and N<sub>2</sub>O. Overall, the emissions profile is consistent with typical short-term offshore drilling operations and reflects the energy-intensive nature of marine power and propulsion requirements, rather than any process-specific or fugitive emissions.

Given the campaign's temporary duration and the absence of production, well testing, flaring or routine hydrocarbon venting activities, the overall impact is considered limited in scale and duration, with emissions largely confined to operational fuel combustion during the drilling campaign.

## 6.12 Noise and vibration emissions

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Underwater sound in the marine environment arises from both natural and anthropogenic sources. Natural sources form part of the ambient acoustic environment. For the purposes of this ESIA, noise refers to anthropogenic underwater sound with the potential to cause adverse effects on marine fauna, including injury, disturbance, masking, or other ecologically relevant responses.

This assessment therefore focuses on Project-related underwater sound sources with the potential to affect marine fauna. These comprise the continuous operation of the MODU, particularly during dynamic positioning, support vessels and helicopters, and impulsive sound associated with potential vertical seismic profiling (VSP) operations.

### 6.12.1 Regulatory Controls

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The principal regulatory instruments applicable to underwater noise include Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (Habitats Directive), Directive 2009/147/EC on the conservation of wild birds (Birds Directive), and Directive 2008/56/EC establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive, MSFD), as implemented in Greece through, inter alia, Law 3937/2011 on biodiversity conservation and Law 4014/2011 on the environmental licensing of projects and activities.

Under the Habitats Directive, Member States are required to establish a system of strict protection for species listed in Annex IV, including a prohibition on deliberate disturbance, particularly during periods of breeding, rearing, hibernation or migration. This protection applies both within and outside designated

Natura 2000 sites. In Greek marine waters, this regime is applicable to cetaceans and marine turtles, and project-related underwater noise must therefore be assessed where it has the potential to cause injury, significant disturbance, or adverse effects on the conservation objectives of Natura 2000 sites.

Under the MSFD, underwater noise is identified as a human-induced pressure on the marine environment through Descriptor 11, which addresses the introduction of anthropogenic energy, including underwater sound, at levels that may adversely affect marine ecosystems. Descriptor 11 distinguishes between impulsive sound sources and continuous low-frequency noise. This distinction is directly relevant to the Project, as the potential VSP operations constitute an impulsive noise source, whereas the drilling unit and support vessels generate continuous non-impulsive noise.

Accordingly, this ESIA considers underwater noise in terms of its source characteristics, magnitude, duration, temporal pattern and spatial extent, and evaluates whether the proposed activities could result in significant effects on protected species or sensitive marine habitats.

Where the Project may have the potential to affect a Natura 2000 site, these matters are addressed through the Special Ecological Assessment required under Law 4014/2011, thereby incorporating the requirements of Article 6(3) of the Habitats Directive into the environmental licensing process. In this regulatory context, underwater noise from offshore hydrocarbon exploration activities must be assessed within the ESIA framework, and the Project will apply appropriate mitigation measures consistent with applicable Greek and EU legal requirements and relevant regional guidance, including resolutions and recommendations adopted under the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS).

Where relevant, the Project will consider the principles of the Offshore Protocol to the Barcelona Convention, which aims to prevent and reduce pollution from offshore exploration and exploitation activities.

## 6.12.2 Airborne Noise

### 6.12.2.1.1 MODU and Vessels

The main sources of airborne noise from the Project are expected to be vessel machinery, including engines, generators, pumps, ventilation systems, and deck equipment such as cranes. Noise levels onboard the MODU and support vessels will be managed in line with occupational health and safety requirements and maritime regulations to protect crew health and safety.

The MODU will be located about 44 km from the nearest island shoreline. At this distance, and given atmospheric sound attenuation and the offshore setting, airborne noise from the MODU and PSVs is not expected to cause perceptible or significant effects at onshore noise-sensitive receptors.

### 6.12.2.1.2 Helicopters

A medium twin-engine helicopter (AW139) will support offshore operations, including crew changes, critical small equipment delivery, surveillance, and emergency response. Small urgent items may be carried on personnel flights where payload capacity allows; routine cargo-only flights are not planned. Helicopter flights represent the only planned aircraft activity during normal Project operations and are expected to occur

several times per week. Where practicable, flights will follow established routes to and from Corfu International Airport (CFU) to minimise overflight of onshore noise-sensitive receptors.

Helicopter noise is generated primarily by engines, transmission systems, and main and tail rotor blade passage, with most energy at relatively low frequencies and additional broadband components. Given that flights are infrequent, of very short duration over any given location, and limited to defined approach and departure corridors, helicopter operations are assessed as representing a limited and highly transient contribution to the Project's overall noise emissions. The offshore location of the MODU (approximately 44 km from the nearest island shoreline), combined with the use of established offshore flight paths, means that helicopter overflights are not expected to result in perceptible or significant effects at onshore noise sensitive receptors.

### 6.12.3 Underwater Noise

#### 6.12.3.1 Underwater Sound and Assessment Metrics

Sound travels through liquids as longitudinal or compression waves. These waves produce alternating regions of compression and rarefaction due to deviations in pressure from equilibrium. Sound pressure ( $p$ ) is the average variation in pressure caused by sound. Sound pressure levels (SPL) are typically expressed in decibels (dB), a logarithmic scale that represents the ratio of two values of a physical quantity. It is used to measure the amplitude or 'loudness' of a sound.

As the dB scale is a ratio, it is expressed relative to a reference level, which must be specified with dB values for them to be meaningful. The reference pressure level in underwater acoustics is 1 micropascal ( $\mu\text{Pa}$ ), noted as dB re 1  $\mu\text{Pa}$ . Whereas the reference pressure level used in air is 20  $\mu\text{Pa}$ , which was selected to match human hearing sensitivity. As a result of these differences in reference standards, sound levels in air are not equal to underwater levels. Because underwater and airborne sound levels use different reference pressures and are measured in different acoustic media, values expressed in dB re 1  $\mu\text{Pa}$  and dB re 20  $\mu\text{Pa}$  are not directly comparable without careful qualification. For sound-pressure levels only, a commonly used rule of thumb is that underwater sound pressure levels expressed in dB re 1  $\mu\text{Pa}$  are approximately 61–62 dB higher than airborne levels expressed in dB re 20  $\mu\text{Pa}$ , although such comparisons should be treated with caution.<sup>50</sup> This is a reference-level conversion only and does not make airborne and underwater noise levels directly comparable in terms of propagation, perception or environmental effect.

Peak sound pressure is the maximum instantaneous sound pressure reached during a specified time interval and is expressed in pascals (Pa). The corresponding peak sound pressure level (peak SPL) is expressed in decibels (dB re 1  $\mu\text{Pa}$ ) and is useful for characterising impulsive signals such as air-gun pulses.

Root mean square (RMS) sound pressure level (SPL<sub>rms</sub>) is the level corresponding to the square root of the mean square sound pressure over a specified time interval. The underlying RMS sound pressure is expressed in pascals (Pa), whereas SPL<sub>rms</sub> is expressed in decibels (dB re 1  $\mu\text{Pa}$ ). When using SPL<sub>rms</sub> to quantify a transient sound source, the averaging period must be specified, as the SPL<sub>rms</sub> value depends on this interval.

<sup>50</sup> Assessment of the environmental impact of underwater noise, OSPAR, 2009, 41 pp

Underwater broadband ambient sound levels in offshore environments are primarily controlled by wind, sea state, precipitation and biological activity, with additional contributions from distant anthropogenic sources such as commercial shipping. In relatively quiet offshore conditions with low shipping influence and calm seas, broadband sound pressure levels (SPLrms) can be below 100 dB re 1 µPa, whereas in more typical shipping-influenced Mediterranean conditions, including those observed in the Ionian Sea, monitoring programmes have reported average broadband SPLrms of  $\sim 110 \pm 6$  dB re 1 µPa.<sup>51,52</sup> Ambient conditions in the Ionian Sea are therefore expected to vary over time depending on vessel traffic, weather and biological activity, and the Project sound field should be considered in the context of this already variable regional soundscape. See the Project's ESBS (**Annex 02**) for further information on the noise baseline.

Strong winds, heavy rainfall, or intense biological activity, such as biological choruses, can cause short-term increases of several tens of decibels above background sound levels. In the low-frequency range (approximately 20–500 Hz), ambient sound is often dominated by distant shipping noise, with large baleen whale vocalisations contributing when present. Weather-related noise from wind-driven waves and wave breaking typically dominates from a few hundred Hz to several kHz, and sometimes up to tens of kHz.<sup>53</sup>

Underwater sound levels generally decrease with distance from the source. The rate and pattern of propagation depend on source characteristics, water depth, the water-column sound-speed profile, bathymetry and seabed properties.

### 6.12.3.2 Underwater Noise – Non-Impulsive

Underwater sound emissions are commonly categorised as either non-impulsive (continuous) or impulsive. Non-impulsive sound is characterised by continuous or repeated non-pulsed emissions and may be tonal, broadband, or a combination of both.<sup>54</sup> Underwater non-impulsive sound emissions will be generated by the MODU and vessels (engine sound associated with transit and dynamic positioning operations and generators), the interaction of the formation-bit whilst drilling, and helicopter activities.

#### 6.12.3.2.1 MODU and Vessels

Project vessels are expected to generate underwater noise of a broadly similar character to that produced by other large commercial vessels currently operating in the Ionian Sea, although source characteristics will vary depending on vessel type, propulsion, speed and operational mode. The primary sources of underwater sound from vessels are propeller cavitation, propeller singing, and propulsion; other sources include hydrodynamic flow around the hull, bubbles breaking in the wake, and the operation of machinery and equipment. Propeller cavitation is typically the dominant source of underwater sound from vessels, and its intensity is generally related to vessel size, speed and loading characteristics.

<sup>51</sup> Fakiris et al., “Uncovering the soundscape of the Ionian Sea” (UACE 2023).

<sup>52</sup> ACCOBAMS, “Mediterranean technical assessment on anthropogenic underwater noise” (MOP9 Inf.25, 2025).

<sup>53</sup> DOSITS (Discovery of Sound in the Sea), Ocean Noise Variability and Noise Budgets.

<sup>54</sup> Southall BL, Bowles AE, Ellison WT, Finneran JJ, Gentry RL, Greene CR, Kastak Jr D, Ketten DR, Miller JH, et al. (2007) ‘Marine Mammal Noise Exposure Criteria: Initial Scientific Recommendations’, *Aquatic Mammals* 33(4): 411-521 <https://doi.org/10.1080/09524622.2008.9753846>.

Large vessels tend to produce higher sound levels than small ones, and vessels underway with a full load produce more sound than unladen vessels. For a given vessel, sound also tends to increase with increased speed. Representative broadband source levels for support vessels and other small to medium offshore vessels are commonly reported within the approximate range 170–195 dB re 1  $\mu$ Pa @1 m, depending on vessel size, propulsion characteristics and speed. Sound levels would generally decrease with distance from the source.

The MODU represents the dominant continuous (non-impulsive) underwater noise source during routine operations, with acoustic characteristics influenced primarily by thruster activity, propulsion systems, onboard machinery and operational mode, with additional smaller contributions from structure-borne vibration and drilling-related equipment. The underwater sound field is a superposition of sound from simultaneously operating sources, with energy arriving at a receiver via multiple propagation paths (e.g. direct, surface- and bottom-reflected).<sup>55</sup> Drilling noise and noise generated by onboard equipment tends to be dominated by low-frequency components.<sup>56</sup> Additional continuous underwater sound will be generated intermittently by support vessels.

Table 6-30 provides representative underwater source information for the principal Project vessel types, based on published values for comparable offshore sources. The values are representative source levels for comparable vessel types and do not constitute Project-specific measurements. Actual source levels will vary with vessel configuration, operating mode, propulsion demand, speed and environmental conditions.

**Table 6-30 – Representative Underwater Source Levels for Project Vessels**

| NOISE SOURCE         | SOUND TYPE                 | EXPECTED FREQUENCY RANGE, HZ | EXPECTED SPL <sup>57</sup>       |
|----------------------|----------------------------|------------------------------|----------------------------------|
| MODU                 | Non-impulsive (continuous) | 40 - 600                     | 195 dB re 1 $\mu$ Pa @ 1 m       |
| Support Vessel (PSV) | Non-impulsive (continuous) | 50 - 300                     | 180 - 190 dB re 1 $\mu$ Pa @ 1 m |

**Source:** *Review and Assessment of Underwater Sound Produced from Oil and Gas Sound Activities and Potential Reporting Requirements under the Marine Strategy Framework Directive, Genesis Ref: J71656 Document No. J71656-Final Report –G2 Date: July 2011.*

*Richardson W J, Greene C R, Malme C I and Thompson D H (1995). Marine mammals and noise Academic Press, San Diego, CA. 576 pp.*

### 6.12.3.2.2 Helicopters

During approach to and departure from the MODU, the helicopter passes over the sea surface and helideck, during which a small proportion of airborne sound may couple into the water column. However, air-to-water acoustic coupling is weak, and any underwater sound associated with helicopter overflights is confined to

<sup>55</sup> Erbe, C., and MecPerson C., *Underwater noise from geotechnical drilling and standard penetration testing, 2017, The Journal of the Acoustical Society of America: 142, pp: EL281-EL285.*

<sup>56</sup> *Review and Assessment of Underwater Sound Produced from Oil and Gas Sound Activities and Potential Reporting Requirements under the Marine Strategy Framework Directive, Genesis Ref: J71656 Document No. J71656-Final Report –G2 Date: July 2011*

<sup>57</sup> *Extrapolated to 1 m from the source. Source levels are indicative published values for comparable offshore sources and are presented for screening-level comparative purposes only; they do not represent site-specific measurements for the Project.*



short periods directly beneath the aircraft and attenuates rapidly with increasing depth and horizontal distance.

Given that flights are infrequent, of very short duration over any given location, and limited to defined approach and departure corridors, helicopter operations are assessed as representing only a minor and highly transient contribution to the Project's overall underwater noise environment. In comparison with the continuous underwater noise generated by the MODU operating in dynamic positioning mode and by support vessels, helicopter-related underwater sound is expected to make only a negligible contribution to the overall Project underwater noise environment and is not expected to result in significant disturbance to marine fauna.

#### 6.12.3.2.3 Remotely Operated Vehicle (ROV)

During drilling, a single ROV will be deployed from the MODU to support routine and contingency subsea tasks. These tasks include periodic and as-required visual inspections of the blowout preventer (BOP) and marine riser, as well as pre- and post-drilling seabed inspections. Underwater noise from ROV operations is generated primarily by low-power electric thrusters and onboard equipment, producing low-intensity, highly localised sound.

ROV deployments will be intermittent, brief and localised to the vicinity of the subsea equipment and well location. The associated sound levels are much lower than those from the MODU in dynamic positioning mode or from support vessels. ROV operations are expected to contribute only minimally to underwater noise due to their low source levels, restricted operating area around the wellhead, and the dominance of noise from the MODU and dynamic positioning (DP) system.

### 6.12.3.3 Underwater Noise – Impulsive

Impulsive noise consists of short-duration, transient sound events with a rapid onset and broad frequency content in the low- to mid-frequency bands relevant to marine fauna. If undertaken, VSP operations will be conducted as part of formation evaluation following completion of the relevant hole section

To minimise disturbance to marine fauna, the Project will implement standard mitigation measures during VSP operations. The assessed measures include a soft start before full source activation and visual monitoring for marine mammals before and during source initiation, subject to the final approved protocol.

#### 6.12.3.3.1 Vertical Seismic Profiling (VSP)

VSP operations will be conducted following completion of drilling activities. For the purposes of this assessment, the acoustic source is assumed to comprise a small air-gun array with a total source volume of up to 1,000 in<sup>3</sup>, deployed approximately 5-10 m below the sea surface from the MODU. Data acquisition is limited in duration, typically lasting up to 12 hours per section, with a maximum of two sections and up to approximately 130 shots per section.

During VSP operations, impulsive sound energy is transmitted from a near-surface source to receivers located within the wellbore. The emitted sound energy is predominantly directed towards the seabed and

subsurface geological formations, with the highest sound levels occurring immediately beneath the source. Each air-gun discharge also ensonifies the surrounding water column, generating a short-duration, low-frequency impulse whose received level decreases with increasing distance from the source.

The sound energy produced during VSP operations is substantially lower than that associated with conventional 2D or 3D marine seismic surveys, both in terms of individual source volume and total acoustic energy. Consequently, the spatial extent and duration of underwater noise exposure from VSP activities are expected to be limited in comparison with large-scale 2D or 3D seismic surveys, and the contribution of these activities to regional impulsive noise under MSFD Descriptor 11 is correspondingly limited in time and space.

The VSP source considered for the Project comprises a small air-gun array of four 250 in<sup>3</sup> guns, with a total discharge volume of 1,000 in<sup>3</sup>, deployed for formation evaluation at a single well location. The VSP is expected to involve a limited number of shots (up to approximately 260 shots across two short sections), undertaken over brief operational periods separated by several days. This source configuration remains substantially smaller in total acoustic output, duration and spatial extent than typical 2D or 3D marine seismic survey arrays.

#### 6.12.3.3.2 Acoustic Positioning

Acoustic positioning systems (e.g. Ultra-Short Baseline - USBL), if used in support of drilling operations, emit high-frequency, short-duration acoustic pulses at intermittent intervals. Such systems are standard for offshore drilling operations and are characterised by very limited spatial extent and short emission durations. Any underwater sound generated by acoustic positioning equipment would be highly localised and minor when compared with continuous MODU and dynamic positioning noise. Accordingly, acoustic positioning systems are not expected to result in significant underwater noise effects.

### 6.12.4 Noise emissions from onshore logistics support

Noise emissions at the shore base are similarly limited and arise from intermittent operation of mobile equipment, including forklifts, trucks, cranes, and auxiliary machinery used during cargo handling and storage activities.

Noise is expected to be typical of standard port operations, consisting mainly of short-duration, low-frequency mechanical noise associated with engine use, lifting operations, and vehicle movements. Because activities will take place within an established port area, these sound sources will be absorbed into the existing industrial noise environment.

The temporary nature of operations, combined with the limited number of personnel (approximately six workers) and the absence of heavy construction or continuous industrial activity, means that noise generation will be intermittent rather than continuous. Any potential disturbance will therefore be localised within the port boundary and will not extend to surrounding residential receptors at significant levels.

## 6.13 Electromagnetic radiation and radioactivity emissions

### 6.13.1 Radioactive Sources

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Radioactive materials will not be routinely stored onboard the MODU. However, sealed radioactive sources may be used intermittently during logging-while-drilling (LWD) and wireline logging operations undertaken for formation evaluation. These may include americium-beryllium (Am-241/Be) neutron sources and caesium-137 (Cs-137) gamma sources. The sources will be sealed and encapsulated within specialised downhole logging tools in accordance with applicable standards for well-logging sources.

During normal operations, sealed sources will be deployed and recovered with the logging tools following each operation. There are no planned discharges or releases of radioactive material to the marine environment. Any source-recovery contingency, including a source becoming lodged or lost in the well, will be managed in accordance with the applicable radiation-safety and emergency procedures.

The use of sealed radioactive sources will be limited to the source types, activities and quantities authorised under the applicable licences issued by the Greek Atomic Energy Commission (EEAE) and Greek radiation-protection requirements. Transportation, temporary storage, handling, use and emergency source-recovery arrangements will be managed by the specialist logging contractor under its approved Radiation Safety Manual and applicable licence conditions, in compliance with Council Directive 2013/59/Euratom as implemented in Greek legislation.

These arrangements will include controls for source inventory, security, handling, personnel exposure and emergency preparedness. Sealed radioactive sources are not chemical substances or planned discharge streams and will be managed separately from the chemicals addressed in the Chemical Use Plan (**Annex 05**).

### 6.13.2 Naturally Occurring Radioactive Material

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Production-related accumulation of naturally occurring radioactive material (NORM) is not expected because the Project does not include hydrocarbon production, processing or produced-water handling. If any material suspected of containing elevated NORM is identified, it will be managed in accordance with the applicable radiation-protection and waste-management requirements.

## 6.14 Decommissioning Phase – site restoration

### 6.14.1 Time or Conditions Estimation for Operation Cessation

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The decommissioning phase of the Asopus-1 exploration well will commence immediately following completion of drilling and formation evaluation activities. As the project is limited to exploration drilling, no production phase is planned. Accordingly, the well will be permanently plugged and abandoned (P&A) prior to demobilisation of the mobile offshore drilling unit (MODU).

The timing of decommissioning activities is therefore directly linked to the conclusion of drilling operations and is expected to occur within the overall duration of the drilling campaign. All decommissioning activities

will be conducted in accordance with the Notification of Well Operations accepted by HEREMA before commencement of drilling.

## 6.14.2 Offshore decommissioning

### 6.14.2.1 Demobilisation of MODU

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Following permanent plugging and abandonment of the well, the MODU will be disconnected from the well and prepared for demobilisation. The blowout preventer (BOP) and marine riser will be disconnected, flushed with seawater as required, and recovered to the MODU, the K-BOS shall also be recovered to the MODU.

All temporary subsea equipment deployed during the drilling campaign, including acoustic positioning transponders and any clump weights, will be retrieved using a remotely operated vehicle (ROV). A post-operation seabed survey will be conducted to confirm clearance of debris and recovery of equipment.

The MODU will then depart the operational area using its own propulsion system. As no anchors are deployed during operations, no anchor recovery or associated seabed disturbance is required.

### 6.14.2.2 Decommissioning of Wellhead

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Well decommissioning will be undertaken through plug and abandonment (P&A), in accordance with the NoWO and established offshore drilling practices. Cement plugs will be installed to create rock-to-rock barriers across the reservoir section and any permeable formations with flow potential, preventing crossflow and minimising the risk of unintended fluid release.

Following installation and verification of abandonment barriers using the methods specified in the final abandonment programme, the wellhead will be left in situ

After the recovery of the subsea equipment, the MODU-deployed ROV will undertake a post-operation seabed survey to confirm recovery of Project equipment and the absence of Project-related debris in the vicinity of the well.

### 6.14.2.3 Restoration of the occupied site

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Overall, no specific restoration measures beyond confirmation of seabed clearance are required.

## 6.14.3 Onshore decommissioning

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Once the drilling campaign concludes and the MODU departs, the temporary logistics base will be gradually demobilised. All project-specific temporary facilities and equipment, including portable offices, storage units, handling tools, temporary fencing, signage, and barriers, will be dismantled and removed from the port area.

Remaining materials and backload items will be processed for return to suppliers, transfer to licensed waste management facilities, or transport to other operational bases. Temporary signage, barriers, and traffic management systems installed for the project will be dismantled. The Project area will be inspected and left

in the condition agreed with the Port Authority. Demobilisation activities will be conducted in accordance with environmental, health, and safety procedures, with particular attention to spill prevention, waste handling, and minimising disruption to ongoing port operations

The Project will utilise existing facilities at the Igoumenitsa supply base and does not include construction of permanent onshore infrastructure. Upon completion of offshore activities, use of the logistics base for the Project will cease.

Any materials, equipment, or wastes associated with the drilling campaign will be removed from the site in accordance with operational procedures and applicable regulatory requirements.

#### 6.14.3.1 Demolition of permanent structures, removal of equipment and materials, and methods of disposal

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No permanent structures will be constructed as part of the Project; therefore, no demolition activities are required.

All equipment and materials mobilised in support of the drilling campaign, including chemicals, drilling consumables, and wastes returned from offshore operations, will be removed from the logistics base. Materials will be returned to suppliers, reused, or managed through appropriate waste handling and disposal routes in accordance with applicable requirements.

#### 6.14.3.2 Restoration of the occupied site

---

As no permanent facilities or land take are associated with the Project, restoration requirements are limited. Any temporary use of areas within the logistics base will cease following completion of operations, and areas will be left in a condition consistent with their pre-existing use. No physical restoration works are anticipated beyond the removal of Project-specific temporary facilities, equipment, materials, and waste, and the completion of any close-out actions agreed with the Port Authority.

#### 6.14.4 Carbon footprint after completion of project operation

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Following completion of drilling, formation evaluation, and well decommissioning or suspension, a short-term demobilisation phase will take place. During this phase, emissions will continue to be generated from the transport of personnel, equipment, and materials. These include MODU transit from the operational area, return of support vessels to port, transfer of equipment and materials to shore, and helicopter flights associated with crew changes and final personnel demobilisation.

These activities are temporary and limited in duration and are comparable in nature and scale to mobilisation activities described in Section 6.5. No new or additional emission sources are introduced during demobilisation beyond those already assessed for routine operations.

Upon completion of demobilisation, all offshore and associated support activities will cease. The wellhead shall be left in situ, as it is a passive structure with no associated emissions.

Onshore, use of the Igoumenitsa supply base will cease following completion of operations, and no ongoing emission sources will remain associated with the Project.

Accordingly, while minor, short-term greenhouse gas emissions will occur during the demobilisation phase, the Project does not result in any ongoing or residual emissions following completion of activities. The overall carbon footprint is therefore limited to the temporary duration of the mobilisation, drilling and demobilisation phases, with no long-term contribution to atmospheric emissions.



## 7 Alternative Solutions

The Project team used Energean's experience in Greece, Italy, Israel, and other regions to assess the proposed exploration in Block 2. This chapter compares key alternatives, summarising their advantages and disadvantages, with an emphasis on environmental impact, compliance with relevant Greek and EU requirements, including the Offshore Protocol, and adaptation to climate change. The following main principles guided the design selection:

- Avoid harm to people, consistent with applicable health and safety legislation and Energean's corporate policies.
- Minimise the environmental footprint.
- Minimise risks and ensure technical feasibility.

The alternatives assessment for the Asopus-1 exploration well was conducted during the early design stages, when changes could still materially affect environmental performance. The screening focused on technically feasible options and compared alternative technologies and approaches to minimise the environmental footprint of a single offshore exploration well, including reducing well length, drilling duration, logistics requirements, and associated emissions. Activities related to hydrocarbon production, well testing, or field development were excluded from this assessment.

Energean follows a phased, structured process with clear evaluation criteria, from business case identification to investment decision (Figure 7-1), considering impacts across the entire value chain.

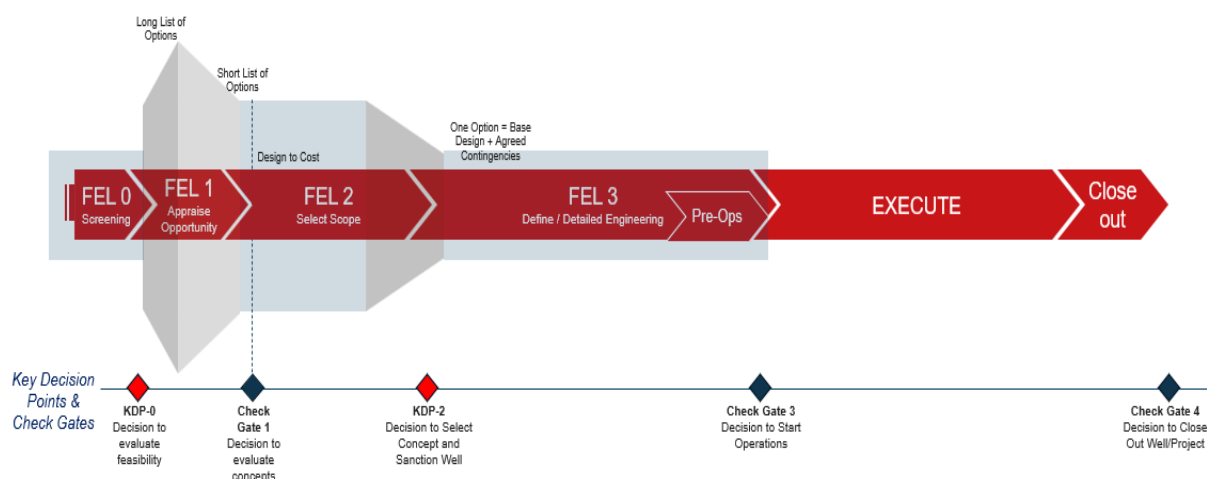


Figure 7-1: Energean Project Development Process

As the design matured, options were progressively narrowed to those technically feasible and environmentally acceptable for the exploration well.

### 7.1 No-Action Alternative

The No-Action Alternative was retained throughout project planning as the baseline alternative against which the environmental and socio-economic implications of the proposed exploration programme were evaluated.

### 7.1.1 Technical and Strategic Implications

Under the No-Action Alternative, the Asopus structure within Block 2 would remain unevaluated, and no exploration drilling would be undertaken.

The main consequence of the No-Action Alternative is the continuation of the current level of subsurface uncertainty within Block 2. No direct geological, geophysical or reservoir data would be acquired to confirm the presence, extent or characteristics of potential hydrocarbon resources. As a result:

- Both the Project proponents and HEREMA would continue to rely on indirect interpretations derived from existing seismic and regional datasets, with no additional drilling-derived data available to reduce uncertainty or refine basin understanding.
- Knowledge of the offshore resource potential within Block 2 would not be advanced through empirical data acquisition, and the potential role of the area within future national or regional energy considerations would remain uncertain.
- Minimum work programme commitments under the Block 2 Lease Agreement would not be fulfilled, which may result in partial or full licence relinquishment in accordance with contractual provisions and the applicable regulatory framework.

### 7.1.2 Environmental and Scientific Considerations

From an environmental perspective, implementing the No-Action Alternative would avoid the short-term, localised impacts associated with offshore exploration drilling activities. In particular:

- There would be no project-related atmospheric emissions, underwater noise, seabed disturbance or operational discharges associated with drilling operations.
- The Project would not add project-specific pressures to environmental effects in the area during the exploration period.

At the same time, offshore environmental surveys and monitoring activities associated with the Project would not be undertaken. Consequently, no additional site-specific environmental data would be generated to support marine scientific knowledge, Marine Spatial Planning (MSP), or the implementation of the Marine Strategy Framework Directive (MSFD). In addition, the Project-specific application of Best Available Techniques (BAT) and Best Environmental Practices (BEP) within an operational offshore context would not occur.

### 7.1.3 Socio-economic Considerations

Under the No-Action Alternative, no project-related economic activity would be generated. In particular:

- There would be no use of port facilities, marine or aviation logistics, or associated support services at the local or regional level.
- No temporary service demand linked to the exploration campaign would arise.
- Estimated short-term investment associated with the exploration drilling campaign, amounting to approximately €12 million in expenditure associated with the exploration drilling campaign at the

national and local level, would not occur under the No Action Alternative.

- Under the No Action Alternative, exploration drilling in Block 2 would not proceed. As a result, any long-term benefits to the Greek State dependent on successful hydrocarbon identification and appraisal, including fiscal and socio-economic effects, would not be realised. The subsurface resource potential of Block 2 would also remain unassessed, thereby reducing the information available for future national energy policy and strategic planning.

Greece currently consumes in the order of 5-6 billion cubic metres (BCM) of natural gas annually. Preliminary geological assessments for the Asopus-1 prospect in Block 2 indicate a potential gas initially in place (GIIP) in the order of 270 BCM. However, these estimates remain highly uncertain and require verification through exploration drilling and subsequent appraisal. They do not represent proven reserves.

Between 2023 and 2025, Greece is estimated to have imported an average of about €19 billion per year in energy products, including crude oil, natural gas, and refined petroleum products, accounting for nearly a quarter of total goods imports.

In this context, the No Action Alternative means that Block 2's potential contribution to domestic subsurface knowledge, as well as its possible relevance to future energy supply diversification and national energy planning, would not be further evaluated in the current ESIA.

## 7.2 Description of Alternative Solutions

### 7.2.1 Introduction

The assessment of alternatives for the Asopus-1 exploration well followed a structured screening process, as illustrated in Figure 7-2.

Options were grouped by the main design and operational choices that can materially influence environmental performance, technical feasibility, safety, logistics requirements and overall project footprint. This included consideration of alternative well locations and trajectories, drilling unit type, drilling sequence, drilling fluids and cuttings management, cementing approach, lighting requirements, decommissioning strategy and supporting logistics infrastructure.

The purpose of this process was to identify the solution that best meets the exploration objectives while applying minimisation-by-design principles and ensuring consistency with regulatory requirements and good international industry practice.

The Project does not include well testing or routine flaring activities. These activities were excluded from the Project scope and therefore were not carried forward as preferred operational options.

In addition to technical and operational considerations, alternatives were screened against known environmental and spatial planning constraints, including Natura 2000 sites, marine protected areas, key fisheries activities, shipping routes, and available marine environmental baseline information. No environmental constraint was identified that would preclude drilling within the selected exploration target area. Environmental considerations were incorporated into the selection process with the objective of avoiding or minimising unnecessary disturbance wherever technically practicable.

The alternatives assessment applied the mitigation hierarchy principles of avoidance and minimisation during project design. For a temporary exploration activity with no permanent production infrastructure, environmental impacts were primarily reduced through design selection, location optimisation, use of existing infrastructure and minimisation of offshore activity duration.

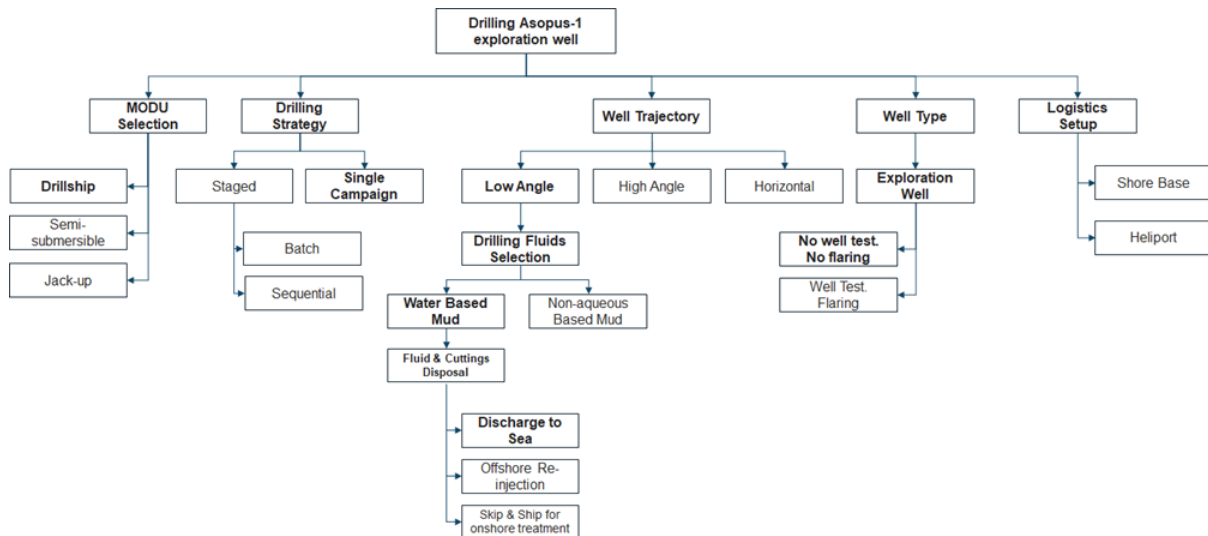


Figure 7-2: Summary of options considered for exploration drilling

## 7.2.2 Exploration Well Location

Alternative locations for the single Asopus-1 exploration well were assessed to maximise the likelihood of evaluating key exploration targets, while retaining a single-well scope and seeking to minimise drilling complexity, duration, and environmental impact. The assessment used the available 3D seismic data, structural restoration, and the current depositional model for the Asopus structure. Key factors included structural position, fault-block configuration, and predicted reservoir facies and porosity distribution.

The primary alternative location 1A is on the structurally highest part of the structure (crestal). It was selected for its favourable structural position, proximity to the platform margin, and potential reef-influenced facies. According to the current geological model, these settings are more likely to contain well-developed porous reservoir intervals than more interior platform areas.

An alternative location, referred to as 1B, was identified within a separate structural fault block. This location is situated further within the carbonate platform, where reservoir development is interpreted to be less favourable than at location 1A. Consequently, 1B was considered a less suitable location for the Asopus-1 exploration well, which is designed to test and de-risk the primary play.

Additional locations further north were considered during screening. However, they did not offer a clear geological advantage over the primary site for the main exploration objectives and were not selected as preferred options.

Asopus-1A was selected as the preferred location because it meets the main exploration objectives with a single well in the most favourable structural and reservoir setting (Table 7-1). This choice supports minimisation-by-design principles by helping to reduce expected drilling time, logistics, and environmental impact. 1A is therefore the preferred location for the Asopus-1 exploration well.

**Table 7-1: Summary of Well Location Alternative Analysis**

| OPTION                                | REGULATORY COMPATIBILITY                                                                                                                                  | TECHNICAL FEASIBILITY                                                                                                                                                                                                             | FINANCIAL FEASIBILITY                                                                                                                                                                        | ENVIRONMENTAL COMPATIBILITY                                                                                                                                                                                                                                           | OVERALL ASSESSMENT                                                                                                                                                                      |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Location 1A</b>                    | Consistent with the Block 2 Lease Agreement and exploration objectives. Supports fulfilment of minimum work programme commitments if drilled as Asopus-1. | Located on the structural crest with a favourable fault-block position and proximity to platform-margin/reef-influenced facies. Considered the most prospective location for testing the exploration target.                      | Unit well cost is expected to be broadly similar to other locations; higher probability of meeting exploration objectives makes this location more efficient from an investment perspective. | Environmental impacts were not considered materially different between alternative locations as all options involved a single exploration well and similar offshore operating activities. Selection was therefore primarily based on geological and technical factors | <b>Preferred option.</b> Preferred location. Provides the most favourable combination of structural position, reservoir prospectivity and exploration efficiency for the Asopus-1 well. |
| <b>Location 1B</b>                    | Consistent with the Block 2 Lease Agreement and exploration objectives. Supports fulfilment of minimum work programme commitments if drilled as Asopus-1. | Technically drillable but situated in a more interior platform setting where reservoir development and porosity are interpreted to be less favourable than at 1A, implying a lower probability of meeting exploration objectives. | Unit well cost is expected to be comparable to 1A. However, lower expected reservoir quality and exploration success probability reduce overall investment efficiency.                       | Environmental impacts were not considered materially different between alternative locations as all options involved a single exploration well and similar offshore operating activities. Selection was therefore primarily based on geological and technical factors | <b>Not preferred.</b> Less favourable location. Technically feasible but offers lower geological prospectivity and reduced likelihood of meeting exploration objectives compared to 1A. |
| <b>Northern Alternative Locations</b> | Consistent with the Block 2 Lease Agreement and exploration objectives. Supports fulfilment of minimum work programme commitments if drilled as Asopus-1. | Technically feasible, but seismic interpretation did not identify a clear geological advantage relative to 1A for the main exploration targets.                                                                                   | Unit well cost is expected to be similar to other alternative locations, with no demonstrable improvement in exploration success potential to justify selection over 1A.                     | Environmental impacts were not considered materially different between alternative locations as all options involved a single exploration well and similar offshore operating activities. Selection was therefore primarily based on geological and technical factors | <b>Not preferred.</b> No clear technical or geological advantage over 1A, and therefore not justified as the selected drilling location for Asopus-1.                                   |

## 7.2.3 Well Trajectory

Alternative well trajectories were considered for the Asopus-1 exploration well, including vertical, low- and high-inclination, and horizontal profiles. A vertical or low-inclination well trajectory was selected as the preferred option because it represents the shortest and simplest well path to the exploration target, thereby helping to reduce expected drilling time, energy use, emissions, and associated discharges (e.g. drill cuttings volume), while seabed disturbance is governed by the surface location and conductor installation rather than

the downhole trajectory. High-inclination and horizontal trajectories were rejected as they would increase well length and drilling complexity without providing environmental or technical benefit for the exploration objectives of a single well.

Table 7-2 summarises the well trajectory alternatives considered and the basis for selecting a vertical or low-inclination trajectory as the preferred option.

**Table 7-2: Summary of Well Trajectory Alternative Analysis**

| OPTION                                 | REGULATORY COMPATIBILITY                                                                                                        | TECHNICAL FEASIBILITY                                                                                                                                             | FINANCIAL FEASIBILITY                                                                                                                                                         | ENVIRONMENTAL COMPATIBILITY                                                                                                                                                           | OVERALL ASSESSMENT                                                                                                                                                                     |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Vertical / Low-Inclination Well</b> | Compatible with standard offshore drilling practices and regulatory requirements for exploration wells in Greek waters.         | Shortest and most direct path to the target from the proposed surface location. Well design is straightforward, with lower operational risk and complexity.       | Expected to be the most cost-efficient option due to reduced drilling duration, simpler equipment, and lower operational risk for the same exploration objective.             | Lower energy consumption, emissions, and drill-cuttings volume than with longer trajectories. Seabed disturbance is determined by surface installation and is similar across options. | <b>Preferred option.</b> Most efficient trajectory for an initial exploration well, offering the best balance of technical simplicity, cost control, and reduced operational duration. |
| <b>High-Inclination Well</b>           | Compatible with regulatory requirements but not required for this target geometry.                                              | Technically feasible but introduces unnecessary drilling complexity and increased well length without improving target access from the selected surface location. | Higher expected cost due to increased drilling time, specialised equipment, and operational complexity, with no corresponding improvement in exploration success probability. | Longer drilling duration increases energy use, emissions, and waste generation relative to the vertical option. Impact type is similar; magnitude is higher due to extended duration. | <b>Not preferred.</b> No technical or environmental advantage for this exploration target; adds unnecessary complexity and cost.                                                       |
| <b>Horizontal Well</b>                 | Compatible with regulatory requirements but generally applied to development or delineation scenarios, not initial exploration. | Technically feasible but unnecessarily complex for an initial exploration well where the target is directly beneath the surface location.                         | Higher expected cost and operational risk compared to a vertical well, with no additional exploration value for this objective.                                               | Longest drilling duration and highest energy use, emissions, and waste generation among the options. No environmental benefit to offset the increased footprint.                      | <b>Not preferred.</b> Inappropriate for an initial exploration well; would increase technical complexity, cost, and environmental burden without exploration benefit.                  |

## 7.2.4 Drilling Unit Type

Alternative drilling unit types were evaluated to identify a technically feasible option with the lowest practicable environmental and safety risk. Jack-up units were excluded due to water depth. Moored semi-submersible units were excluded because anchor deployment and associated anchor handling operations in deep water would introduce seabed disturbance and safety risks that are avoided by a dynamically positioned unit.

Dynamically positioned (DP) semi-submersible units were also considered. While they avoid anchor deployment, they typically offer significantly lower variable deck load (VDL) and storage capacity than a



drillship, which increases the frequency of supply vessel trips and associated marine traffic, emissions, and operational discharges. Their motion characteristics and operational momentum differ from those of a drillship, and they are generally less suited to the logistical and operational requirements of a deepwater exploration campaign of this scope.

A DP drillship was selected as the preferred option. It avoids anchor deployment and associated seabed disturbance, while offering significantly higher VDL and storage capacity, reducing logistics demand and marine traffic. The DP capability also allows faster transit and on-station positioning compared with both moored and DP semi-submersible alternatives, reducing standby time and associated emissions.

Energean acknowledges that a dynamically positioned (DP) mobile offshore drilling unit (MODU) generally has a higher fuel consumption than a moored unit. However, the overall environmental footprint is reduced by eliminating anchor handling, reducing logistics demand, and shortening positioning time. The avoidance of seabed disturbance from anchor systems and the reduction of associated safety risks in deep water were also principal factors in the selection.

For the Asopus-1 exploration well, the combination of environmental, safety, and operational efficiency considerations informed the selection of a drillship as the most appropriate option. The selected Stena DrillMAX drillship operates under an energy management plan that includes operational measures to manage fuel consumption and energy efficiency during drilling operations, subject to monitoring and verification under the Project environmental management system.

The selected DP drillship configuration also contributes to reducing operational and environmental risks through avoidance of anchor deployment and reduction of associated offshore activities, consistent with ALARP principles applied within offshore risk management processes.

Table 7-3 presents the alternative analysis underpinning the MODU selection.

**Table 7-3: Summary of MODU Alternative Analysis**

| OPTION                       | REGULATORY COMPATIBILITY                                           | TECHNICAL FEASIBILITY                                                                                                                                                                                     | FINANCIAL FEASIBILITY                                                                                                                                                 | ENVIRONMENTAL COMPATIBILITY                                                                                                                                                                                                         | OVERALL ASSESSMENT                                                                                                                                                    |
|------------------------------|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Drillship (DP)</b>        | Compatible with regulatory requirements for deepwater exploration. | Preferred for the water depth and offshore conditions. Avoids anchoring. High VDL and storage capacity reduce supply vessel frequency. Faster transit and positioning than semi-submersible alternatives. | Expected to be cost-efficient due to reduced logistics demand, shorter positioning time, and elimination of anchor handling, offsetting higher unit fuel consumption. | Avoids seabed disturbance from anchor deployment. Reduced marine traffic from fewer supply trips lowers associated emissions and discharges. Higher fuel consumption during drilling is managed through the energy management plan. | <b>Preferred alternative.</b> Selected based on operational efficiency, reduced seabed interaction, lower logistics demand, and suitability for deepwater conditions. |
| <b>Semi-submersible (DP)</b> | Compatible with regulatory requirements for deepwater exploration. | Technically feasible and avoids anchor deployment. However, significantly lower VDL and storage capacity than a                                                                                           | Comparable unit cost but higher logistics expenditure due to increased supply vessel trips and                                                                        | Avoids seabed disturbance from anchors but generates more marine traffic and associated emissions due to higher logistics                                                                                                           | <b>Not preferred.</b> Technically feasible but offers inferior logistical efficiency and operational characteristics                                                  |

| OPTION                                     | REGULATORY COMPATIBILITY                                                                                | TECHNICAL FEASIBILITY                                                                                                                                                       | FINANCIAL FEASIBILITY                                                                                                                              | ENVIRONMENTAL COMPATIBILITY                                                                                                                    | OVERALL ASSESSMENT                                                                                                                   |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
|                                            |                                                                                                         | drillship increases supply vessel frequency. Motion characteristics and operational momentum differ, making it less suited to the logistical requirements of this campaign. | potentially longer operational duration.                                                                                                           | demand. Fuel consumption characteristics differ but are not the determining factor.                                                            | compared to a drillship for this exploration campaign.                                                                               |
| <b>Semi-submersible MODU (Moored Unit)</b> | Compatible with regulatory requirements but constrained by seabed conditions and anchoring feasibility. | Technically viable but requires anchor deployment and handling in deep water. Mooring spread introduces operational complexity and safety considerations.                   | Higher expected costs due to anchor handling, installation, and retrieval operations. Additional support vessels increase operational expenditure. | Seabed disturbance from anchor deployment and recovery. Additional support vessels increase overall emissions and marine activity in the area. | <b>Not preferred.</b> Excluded due to increased seabed interaction, operational complexity, and safety considerations in deep water. |
| <b>Jack-up Rig</b>                         | Not applicable, as regulatory compliance cannot be demonstrated due to water depth limitations.         | Not feasible for 840 m water depth.                                                                                                                                         | Not viable.                                                                                                                                        | Not applicable.                                                                                                                                | <b>Not preferred.</b> Not feasible. Excluded due to water depth constraints.                                                         |

## 7.2.5 Drilling Strategy Sequence

Two alternative drilling strategy sequences were considered for the exploration of the Asopus-1 well: a single drilling campaign, in which all activities are completed during one mobilisation of the drilling unit, and a staged campaign, involving multiple mobilisations and demobilisations. A single drilling campaign was selected as the preferred option.

Compared to a staged approach, this strategy helps avoid repeated rig movements and associated marine and aviation logistics, thereby helping to reduce vessel traffic, fuel consumption, atmospheric emissions, and the overall duration of offshore activity. A staged drilling campaign was rejected because it would require additional rig moves and extended offshore presence, increasing cumulative environmental disturbance without providing environmental or technical benefit for a single exploration well.

Alternative drilling windows were reviewed during project planning. The selected campaign schedule was influenced by drilling unit availability, logistics requirements, and environmental considerations. Due to the temporary nature of the activity, offshore location, and implementation of proposed mitigation measures, no environmental advantage was identified that would justify restricting operations to an alternative seasonal window.

Table 7-4 summarises the assessment of drilling strategy alternatives and the basis for selecting a single campaign as the preferred option.

Table 7-4: Summary of Drilling Strategy Sequence Alternative Analysis

| OPTION                                          | REGULATORY COMPATIBILITY                                                                                               | TECHNICAL FEASIBILITY                                                                                                                                               | FINANCIAL FEASIBILITY                                                                                                                                         | ENVIRONMENTAL COMPATIBILITY                                                                                                                                                                                                  | OVERALL ASSESSMENT                                                                                                                                                               |
|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Single Drilling Campaign</b>                 | Compatible with applicable regulatory and permitting requirements for offshore exploration drilling.                   | Enables completion of all drilling activities during a single mobilisation, avoiding rig relocation between phases and reducing operational complexity.             | Expected to be more cost-efficient due to fewer mobilisation/demobilisation events, reduced logistics requirements, and shorter overall operational duration. | Minimises vessel traffic, fuel consumption, atmospheric emissions, and offshore activity duration by avoiding repeated rig moves and associated marine and aviation support operations.                                      | <b>Preferred alternative.</b> Reduces operational complexity and environmental footprint while ensuring efficient completion of exploration objectives in a single mobilisation. |
| <b>Staged Campaign (multiple mobilisations)</b> | Compatible with applicable regulatory requirements but operationally more complex due to repeated mobilisation events. | Technically feasible but requires repeated mobilisation and demobilisation of the drilling unit, increasing operational complexity and extending offshore presence. | Higher expected costs due to additional rig moves, extended offshore operations, and increased logistics demand.                                              | Results in increased vessel traffic, higher fuel consumption, greater atmospheric emissions, and prolonged offshore presence, leading to higher cumulative environmental disturbance without additional exploration benefit. | <b>Not preferred.</b> Technically feasible but increases environmental impacts and operational complexity without providing benefits for a single exploration well.              |

## 7.2.6 Drilling Fluids

Two drilling fluid system options were assessed for the Asopus-1 well:

1. Water-based mud with treated cuttings disposal to the sea.
2. Non-aqueous drilling fluid (NADF or SOBM) with either skip and ship or offshore clean-up/disposal to the sea.

The selected drilling fluid approach for Asopus-1 is Option 1, as outlined in Table 7-5. The selected approach uses water-based muds (WBMs), which provide sufficient operational flexibility to manage formation uncertainties and potential drilling contingencies during exploration activities, while also offering lower environmental risk for cuttings discharge and reduced requirements for cuttings handling, treatment, and transport to shore compared with NADF.

Although non-aqueous drilling fluids (NADFs) can offer improved drilling performance in certain formations and trajectories, particularly hydrate-bearing shales or directional wells, such conditions are not anticipated for the vertical well Asopus-1 well, and therefore NADFs are not proposed for use in this exploration campaign.

Table 7-5: Summary of Drilling Fluids Alternative Analysis

| OPTION                                               | REGULATORY COMPATIBILITY                                                                                                                                                                                                                                                                                                | TECHNICAL FEASIBILITY                                                                                                                                                                                                                                             | FINANCIAL FEASIBILITY                                                                                                                                  | ENVIRONMENTAL COMPATIBILITY                                                                                                                                                                                                                                                                   | OVERALL ASSESSMENT                                                                                                                                                             |
|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Water-Based Mud (WBM) Only</b>                    | Permitted under standard offshore discharge controls. WBM cuttings are discharged to the seabed in the riserless section and discharged from the rig during subsequent sections, subject to standard monitoring and compliance with Greek and EU offshore discharge requirements.                                       | Suitable for all sections of the well, including the riserless top hole where cuttings are discharged directly to the seabed. Provides sufficient operational flexibility for the vertical Asopus-1 trajectory and anticipated formations.                        | Lower cost profile due to single-fluid management, simpler waste handling, and no requirement for skip-and-ship or specialised containment systems.    | Lower environmental risk. WBM cuttings are discharged to the seabed in the riserless section and discharged from the rig during subsequent sections, with reduced toxicity and simpler waste management compared with NADF-based systems.                                                     | <b>Preferred alternative.</b><br>WBM is technically sufficient and regulatorily compliant for all sections of the Asopus-1 exploration well, including the riserless top hole. |
| <b>Non-Aqueous Drilling Fluid (NADF / SOBM Only)</b> | NADF is not proposed for the Asopus-1 well. Its use in the riserless top-hole section is incompatible with the planned drilling approach because cuttings are discharged directly to the seabed. Use of NADF below the mudline would require separate cuttings management measures and regulatory approval.             | Not feasible for the riserless top hole. High performance in specific formations below the mudline (e.g., reactive shales), but not required for the vertical Asopus-1 well where such conditions are not anticipated.                                            | Higher cost profile due to fluid management, handling, transportation and potential cuttings treatment requirements.                                   | Not feasible for the riserless section due to toxicity constraints on direct seabed discharge. Increased waste-management requirements and greater environmental management complexity compared with WBM systems. Any use would require additional controls and cuttings-management measures. | <b>Not preferred.</b><br>Not appropriate for Asopus-1 due to regulatory restrictions on discharge and absence of a technical requirement for NADF.                             |
| <b>Hybrid WBM / NADF (Section-Based Use)</b>         | Permitted under applicable offshore discharge controls. WBM cuttings are discharged to the seabed in the riserless section. For sections below the mudline where NADF is used, cuttings may be discharged or contained subject to compliance with the Offshore Protocol requirements and applicable discharge controls. | Standard industry practice. WBM is used for the riserless top hole section; NADF may be used for lower sections if specific formation conditions require it. For Asopus-1, the vertical trajectory and anticipated formations do not require NADF in any section. | Higher than WBM-only due to dual-system management, fluid transitions, and potential NADF cuttings handling, but standard where technically justified. | WBM discharge in the riserless section is manageable under standard controls. For NADF sections below the mudline, cuttings are subject to the Offshore Protocol requirements. Not justified here as WBM is sufficient throughout.                                                            | <b>Not preferred.</b><br>Standard industry practice but unnecessary for Asopus-1; WBM is technically sufficient for all sections including the riserless top hole.             |

Water-Based Mud (WBM) has been selected as the preferred drilling fluid system for the Asopus-1 exploration well due to lower toxicity and reduced waste management complexity, regulatory acceptability,

operational suitability for the anticipated geological conditions, and reduced waste handling and transportation requirements relative to non-aqueous drilling fluid systems.

## 7.2.7 Treatment/Disposal of Drilling Fluids and Cuttings

Alternative drilling fluid systems were considered for the Asopus-1 exploration well, including the use of water-based mud (WBM), non-aqueous drilling fluids (NADF), and hybrid systems.

The use of water-based mud (WBM) provides several technically feasible options for the management of drilling fluids and cuttings, as outlined in Table 7-6. Although the discharge of certain low toxicity non aqueous drilling fluid (NADF) cuttings may be permitted under the Barcelona Convention framework, NADF cannot be used in the riserless top hole section where cuttings are discharged directly to the seabed. For sections below the mudline, NADF use would involve additional handling, storage, transport, and waste management requirements, particularly during riserless drilling, resulting in increased lifecycle environmental impacts compared to WBM.

WBM was selected as the preferred drilling fluid system. It is compatible with both riserless and riser-based drilling and can be managed using established practices that minimise environmental exposure. In addition, for a single offshore exploration well, the limited volumes generated mean that discharge to sea using WBM is considered the most environmentally and economically proportionate option. This conclusion is consistent with international guidance on drill cuttings management<sup>58</sup>.

**Table 7-6: Summary of Fluids and Cuttings Disposal Alternative Analysis**

| OPTION                                                                         | REGULATORY COMPATIBILITY                                                                                                                                                                                          | TECHNICAL FEASIBILITY                                                                                                                          | FINANCIAL FEASIBILITY                                                                                        | ENVIRONMENTAL COMPATIBILITY                                                                                                                                                                                       | OVERALL ASSESSMENT                                                                                                                              |
|--------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Water-Based Mud (WBM) with Cuttings Discharge to Sea</b>                    | Compliant with applicable offshore discharge regulations, including the Barcelona Convention, which permits disposal of WBM-associated cuttings at sea subject to solids control equipment and permit conditions. | Technically suitable for both riserless and riser-based operations; supported by established offshore practice for WBM handling and discharge. | Most cost-effective option, requiring minimal additional handling, storage, transport, or onshore treatment. | Cuttings discharge causes localised, temporary seabed disturbance; WBM systems minimise toxicity and persistence, and for a single exploration well the volumes involved make this the most proportionate option. | <b>Preferred alternative.</b> Best balance of compliance, operational simplicity, cost, and environmental impact for a single exploration well. |
| <b>Non-Aqueous Drilling Fluids (NADF) with Cuttings Management / Discharge</b> | Disposal of whole NADF fluid to sea is not permitted under any circumstance, consistent with the Barcelona Convention and                                                                                         | Not feasible for this project. NADF use is inherently tied to riserless-section application, which is already excluded on technical grounds    | Not applicable, as the option is excluded on technical grounds before cost considerations arise.             | Not applicable, as the option cannot be implemented at this well.                                                                                                                                                 | Not feasible for Asopus-1. This is a project-specific technical exclusion driven by the riserless-                                              |

<sup>58</sup> IOGP Report 602 on the Environmental effects and regulation of offshore drill cuttings discharges

IOGP Info Sheet "Use of Lifecycle Impact Assessments in drill cuttings waste management decisions".

| OPTION                                                               | REGULATORY COMPATIBILITY                                                                                                                                                                                            | TECHNICAL FEASIBILITY                                                                                                                                                                | FINANCIAL FEASIBILITY                                                                          | ENVIRONMENTAL COMPATIBILITY                                                                                                                             | OVERALL ASSESSMENT                                                                                                                                         |
|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                      | comparable international frameworks. NADF-associated cuttings could in principle be discharged if treated to residual oil content thresholds and approved by permit, but this pathway is not applicable at Asopus-1 | given the water depth at Asopus-1.                                                                                                                                                   |                                                                                                |                                                                                                                                                         | section limitation, not a categorical regulatory prohibition on NADF cuttings management generally.                                                        |
| <b>Offshore Reinjection of Cuttings and Fluids</b>                   | Compliant only where injection infrastructure exists and site-specific approval is granted; this precondition is not met at Asopus-1.                                                                               | Not feasible. No injection well or infrastructure exists in Block 2 or nearby to support reinjection from the drilling location.                                                     | Not feasible due to the absence of the required infrastructure.                                | Not applicable, as the option cannot be implemented.                                                                                                    | Not feasible. Excluded outright: no other well exists nearby to receive reinjected cuttings and fluids.                                                    |
| <b>Riserless Skip-and-Ship (Onshore Treatment of WBM Cuttings)</b>   | Regulatorily acceptable in principle under specific conditions, but not applicable given the technical restrictions.                                                                                                | Not feasible for this project. The absence of a riser system and the water depth approaching the operational limits of riserless mud recovery significantly constrain applicability. | Would require substantial additional logistics, vessel time, and waste transport arrangements. | Increased vessel movements, handling operations, and transport activities would result in higher emissions, noise, and lifecycle environmental impacts. | Not feasible. Operational constraints and water depth limitations make this option unsuitable for Asopus-1, not a rejection of skip-and-ship as a concept. |
| <b>Riser-Based Skip-and-Ship (Onshore Treatment of WBM Cuttings)</b> | Fully compliant where permitted under waste management and offshore discharge regulations.                                                                                                                          | Technically feasible, but requires continuous cuttings handling, storage, and transfer operations from the rig.                                                                      | Increased costs associated with waste handling, transport, and onshore treatment /disposal.    | Higher environmental footprint due to increased logistics, vessel activity, and waste transport compared with direct discharge options.                 | Not preferred. Technically feasible but introduces unnecessary logistical complexity and environmental burden for a single exploration well.               |

## 7.2.8 Cement Systems

Cementing is an essential component of well construction and abandonment, providing zonal isolation and long-term well integrity. For the Asopus-1 exploration well, alternatives for cement type and cementing approach were evaluated at the design stage, with the objective of ensuring well integrity and environmental protection while maintaining a proportionate footprint for a single offshore exploration well.



The assessment considered technically feasible and legally compliant options capable of meeting well objectives and permanent abandonment requirements. The main options and their evaluation are summarised in Table 7-7.

**Table 7-7: Summary of Cementing Systems Alternative Analysis**

| OPTION                                                                  | REGULATORY COMPATIBILITY                                                                                                                                | TECHNICAL FEASIBILITY                                                                                                                                                                                       | FINANCIAL FEASIBILITY                                                                                                                                               | ENVIRONMENTAL COMPATIBILITY                                                                                                                                                                                                                                                            | OVERALL ASSESSMENT                                                                                                                                                                                              |
|-------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Conventional Oilwell Cement Systems</b>                              | Compliant with applicable offshore well construction and abandonment regulations, and consistent with recognised industry standards for well integrity. | Proven technology with an extensive deepwater track record, providing reliable zonal isolation and long-term barrier integrity; predictable performance reduces the need for remedial cementing operations. | Supported by a mature supply chain and well-established operational procedures, enabling cost-effective implementation with low technical risk.                     | Cement production carries an inherent embodied carbon footprint, but reliable performance reduces the likelihood of remedial cementing, minimising overall material use and lifecycle impact; cement volumes will be optimised using logging and design verification to avoid overuse. | <b>Preferred alternative.</b><br>Provides the most robust and reliable solution for well integrity and abandonment while maintaining a proportionate footprint for a single exploration well.                   |
| <b>Alternative / Low-Carbon Cement Formulations</b>                     | Compliant where meeting applicable API and regulatory performance requirements, subject to acceptance by competent authorities on a case-by-case basis. | Limited field experience in deepwater exploration and abandonment conditions introduces uncertainty regarding long-term barrier performance compared with conventional systems.                             | Potentially higher material or supply costs, with possible additional costs for contingency remedial operations if barrier performance is not achieved as designed. | Lower embodied carbon during manufacture; however, an increased risk of leak due to loss of primary seal could require carbon-intensive remedial operations, offsetting the potential carbon benefit.                                                                                  | <b>Not preferred.</b><br>Offers potential carbon benefits, but limited operational track record in comparable deepwater conditions introduces additional technical uncertainty relative to conventional cement. |
| <b>Mechanical / Non-Cement Barrier Systems (Standalone Replacement)</b> | Not acceptable as a standalone solution under current offshore well integrity and abandonment regulatory frameworks.                                    | Not feasible. Mechanical barriers alone are not suitable to provide permanent zonal isolation over geological timescales or to meet primary and secondary barrier requirements.                             | Not feasible due to inability to satisfy regulatory well integrity requirements.                                                                                    | Not applicable, as the option cannot be implemented.                                                                                                                                                                                                                                   | <b>Not preferred.</b><br>Excluded as it cannot meet fundamental regulatory and technical requirements for permanent well barriers.                                                                              |

Based on this assessment, conventional oil-well cement systems have been selected as the primary cementing solution for Asopus-1. This option provides the highest level of assurance for well integrity and regulatory compliance while maintaining a proportionate environmental footprint. Cement volumes will be optimised using calliper-log data and design verification to minimise material use while ensuring effective zonal isolation and permanent abandonment, in line with recognised good industry practice and relevant well integrity standards (e.g. API Std 65-2).

## 7.2.9 Lighting

Lighting requirements for the drilling unit and support vessels were also considered. Offshore drilling operations are classified as restricted in their ability to manoeuvre (RAM), and lighting is therefore required to comply with COLREGS, SOLAS, and relevant Greek maritime safety legislation.

Reducing or modifying lighting beyond these requirements is not feasible, as it would compromise navigational safety, aviation operations, and effective enforcement of the 500 m safety zone. Standard, regulation-compliant lighting has therefore been selected as the only practicable option. Table 7-8 outlines the alternative analysis for the lighting.

**Table 7-8: Summary of Lighting Alternative Analysis**

| OPTION                                                                  | REGULATORY COMPATIBILITY                                                                                                                                                                    | TECHNICAL FEASIBILITY                                                                                                                                                                                 | FINANCIAL FEASIBILITY                                                                                                                                  | ENVIRONMENTAL COMPATIBILITY                                                                                                                                                                                                           | OVERALL ASSESSMENT                                                                                                                                                                            |
|-------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Standard MODU Lighting</b>                                           | Compliant with COLREGS, SOLAS, and applicable Greek maritime safety requirements for vessels restricted in their ability to maneuver (RAM), including enforcement of the 500 m safety zone. | Compatible with offshore drilling unit operations, aviation support activities, and safe navigation across all anticipated weather conditions.                                                        | Standard industry configuration with no additional equipment or operational cost implications.                                                         | Results in localised light emissions and potential visual disturbance; impacts are managed within standard regulatory-compliant operational controls, with no feasible reduction available given the safety function of the lighting. | <b>Preferred alternative.</b><br>Required to maintain safe offshore operations, navigation, and aviation activity while ensuring full regulatory compliance.                                  |
| <b>Spectral-Modified or Alternative Lighting Systems</b>                | Not accepted as a substitute for mandatory marine navigation lighting requirements; any use would be supplementary at most, not a replacement for COLREGS/SOLAS-mandated lighting.          | Reduced reliability in poor weather conditions and for aviation operations, including helicopter approach and landing, compared with standard lighting.                                               | Would require additional equipment and testing without replacing mandatory lighting, representing added cost with no corresponding regulatory benefit. | Any visual impact reduction is not achievable in practice, since mandatory lighting levels cannot be lowered for RAM vessel and safety-zone compliance.                                                                               | <b>Not preferred.</b><br>Not feasible as a substitute for standard lighting. Cannot meet mandatory safety and operational requirements for offshore drilling units classified as RAM vessels. |
| <b>Reduced or Intermittent Lighting (including No Lighting Periods)</b> | Not compliant with COLREGS, SOLAS, or Greek maritime safety requirements for vessels restricted in their ability to manoeuvre and operating within an enforced safety zone.                 | Continuous lighting is required to ensure vessel visibility, collision avoidance, and safe coordination of marine and aviation operations; intermittent or no-lighting periods would compromise this. | Not applicable, as the option is excluded on legal and safety grounds before cost considerations arise.                                                | Not applicable, as the option cannot be implemented.                                                                                                                                                                                  | <b>Not preferred.</b><br>Excluded outright. Fails fundamental safety, legal, and navigational requirements; not a viable alternative under any operational scenario.                          |

## 7.2.10 Well Decommissioning

Asopus 1 is designed, permitted, and assessed as an exploration well only. Following completion of drilling and formation evaluation, the well will be plugged and abandoned (P&A) in accordance with applicable Greek legislation, HEREMA requirements, and good international industry practice. The P&A programme includes the installation and verification of permanent well barriers to ensure long term well integrity and environmental protection.

In line with industry practices for deepwater drilling, the wellhead will be left in place. Retention of the wellhead does not alter the abandonment status of the well. The well will be rendered non flowing and environmentally secure, with no connection to the reservoir and long-term leakage risk is minimised through installation and verification of permanent well barriers in accordance with applicable standards and regulatory requirements. All temporary subsea infrastructure (including the BOP, marine riser, and transponders) will be removed, and no production facilities, pipelines, control umbilicals, or surface installations will be installed.

The physical seabed footprint of a retained wellhead is small (less than 1 m<sup>2</sup>) and does not require routine inspection, operations, or physical intervention activities. The well location is in approximately 840 m water depth, which is significantly deeper than the operating depth of commercial fishing activities in the Ionian Sea. As a result, retention of the wellhead is not expected to disturb fishing activity or restrict access to fishing grounds or other marine users.

From an environmental perspective, retaining the wellhead avoids additional seabed disturbance and vessel activity that would otherwise be required for immediate removal followed by potential future re-entry, and is therefore considered a proportionate and precautionary measure. Retention of the wellhead does not constitute approval of appraisal, development, or production activities. Any future proposal to re-enter the well, drill appraisal wells, conduct well testing, install subsea or surface facilities, or modify the well status would be subject to separate regulatory submissions, environmental and social impact assessments, public consultation, and approval by the competent authorities.

Records of the final P&A configuration, installed barriers, and wellhead status will be prepared and submitted to the relevant authorities to ensure a transparent and auditable regulatory record. The final abandonment configuration, including any retained subsea equipment, will be subject to approval through the applicable regulatory processes and will be implemented in accordance with applicable Greek legislation, HEREMA requirements and relevant obligations of the Barcelona Convention Offshore Protocol.

**Table 7-9: Well Decommissioning Alternative Analysis**

| OPTION                         | REGULATORY COMPATIBILITY                                                                                                                                                                                   | TECHNICAL FEASIBILITY                                                                                                                            | FINANCIAL FEASIBILITY                                                                                        | ENVIRONMENTAL COMPATIBILITY                                                                                                                                            | OVERALL ASSESSMENT                                                                                                                                |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Leave wellhead in place</b> | Consistent with Greek offshore safety legislation, which requires permanent well sealing but does not prescribe wellhead removal as a specific requirement. The approach is part of the NoWO, in line with | Technically straightforward: the well is fully plugged and abandoned with verified permanent barriers, requiring no further subsea intervention. | Avoids the additional subsea intervention and drillship time associated with full removal, reducing offshore | Minimises additional seabed disturbance and vessel activity; the retained structure has a very small footprint (<1 m <sup>2</sup> ) and no operational requirement. No | <b>Preferred alternative.</b> Provides a proportionate, precautionary approach that ensures long-term well integrity while minimising unnecessary |

| OPTION                                                        | REGULATORY COMPATIBILITY                                                                                                                                                                                                                               | TECHNICAL FEASIBILITY                                                                                                                                                     | FINANCIAL FEASIBILITY                                                                                                      | ENVIRONMENTAL COMPATIBILITY                                                                                                                                                                                                               | OVERALL ASSESSMENT                                                                                                                                                                                  |
|---------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                               | established international practice for deepwater well abandonment.                                                                                                                                                                                     |                                                                                                                                                                           | operational cost.                                                                                                          | interaction with fisheries is expected given the water depth (~840 m).                                                                                                                                                                    | environmental disturbance.                                                                                                                                                                          |
| <b>Full Wellhead Removal (Immediate Removal in All Cases)</b> | Also consistent with the same Greek legislative framework, which does not distinguish between removal and retention as a compliance requirement; this option would similarly be presented to HEREMA through the well abandonment notification process. | Requires additional subsea intervention, including cutting and lifting operations, in all scenarios regardless of whether retention would be equally or more appropriate. | Increased offshore drillship time, subsea operations, and associated logistics raise overall cost compared with retention. | Results in additional seabed disturbance and increased vessel activity without a corresponding environmental benefit, particularly where future re-entry potential may need to be preserved; no impact to other marine users is expected. | <b>Not preferred.</b><br>Technically feasible but introduces additional seabed disturbance, emissions, and operational effort without a clear environmental or regulatory advantage over retention. |

## 7.2.11 Management of Operations and Support Infrastructure

The logistics setup for the Asopus 1 exploration drilling programme includes an onshore supply base to support marine logistics and a helicopter base to support personnel transfer and emergency response. During early project planning, Energean undertook a broad screening of logistics options using its regional offshore experience and engagement with potential service providers.

The assessment considered only existing ports and aviation facilities and applied the following criteria:

- Technical suitability for offshore drilling logistics;
- Distance to the offshore operational area;
- Ability to support short term exploration activity;
- Safety and environmental footprint; and
- Commercial interest and availability.

Several options were reviewed but were determined to be impractical, unsuitable, or unavailable for this Project and were therefore screened out prior to detailed assessment.

### 7.2.11.1 Shore base

A structured alternatives assessment was undertaken to identify a suitable shore base for the Asopus-1 offshore exploration drilling programme. The assessment was undertaken at a screening level appropriate to the temporary nature of the Project and considered the use of existing port infrastructure only, as no new shore base construction is proposed.

Ports considered included Igoumenitsa, Patras and Thisvi, together with other western Greek ports that were screened out at an early stage due to technical constraints, including insufficient draft, or because they were too distant from the offshore well location. The assessment considered proximity to the well, vessel transit

time, availability of suitable berth and laydown space, operational compatibility with offshore logistics, and the potential to minimise fuel use, emissions and operational delay.

Following screening, Igoumenitsa was identified as the preferred shore base. It provides the shortest practical sailing distance to the offshore location among the suitable existing options considered and offers compatible existing infrastructure for temporary offshore logistics support without the need for new port infrastructure. Patras and Thisvi were both considered feasible in principle but were less favourable overall due to a combination of greater distance and lower logistics efficiency for the Project. In the case of Thisvi, bidder availability was also not secured, as the bidder ultimately decided not to submit a bid.

On this basis, Igoumenitsa was identified as the preferred shore base option for the Asopus-1 Project, taking account of technical suitability, operational efficiency, commercial availability and environmental considerations.

**Table 7-10: Shore base Location Alternative Analysis**

| OPTION                                                  | REGULATORY COMPATIBILITY                                                                                                                                  | TECHNICAL FEASIBILITY                                                                                                                                                  | FINANCIAL FEASIBILITY                                                                                                                                  | ENVIRONMENTAL COMPATIBILITY                                                                                                                                     | OVERALL ASSESSMENT                                                                                                                                              |
|---------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Igoumenitsa – Shore Base</b>                         | Compliant with applicable port, maritime, and offshore logistics regulations, with existing infrastructure requiring no new permitting for temporary use. | Existing port infrastructure supports temporary offshore drilling logistics, including vessel berthing, cargo handling, and laydown requirements without modification. | Shortest transit time to the offshore location among the options considered, reducing vessel time and associated logistics costs.                      | Shortest practical sailing distance among suitable options, resulting in reduced fuel consumption, vessel emissions, and overall logistical footprint.          | <b>Preferred alternative.</b><br>Offers the optimal balance of proximity, infrastructure suitability, operational efficiency, and reduced environmental impact. |
| <b>Patras – Shore Base (Alternative Option)</b>         | Compliant with applicable regulations on the same basis as Igoumenitsa.                                                                                   | Existing port infrastructure can support offshore logistics operations for exploration activities, comparable to Igoumenitsa in capability.                            | Longer transit distance to the offshore location increases vessel time and associated logistics costs relative to Igoumenitsa.                         | Increased vessel transit distances result in higher fuel consumption, emissions, and underwater noise compared with Igoumenitsa.                                | <b>Not preferred.</b><br>Technically viable but less efficient due to greater distance and increased environmental footprint relative to Igoumenitsa.           |
| <b>Thisvi – Shore Base (Screened Alternative)</b>       | Compliance would depend on confirmation of port access and commercial arrangements, which were not secured for this Project.                              | Suitable infrastructure exists in principle, but bidder interest and confirmed operational availability were not secured.                                              | Lack of confirmed commercial participation removes this option as a reliable logistics solution, independent of underlying infrastructure suitability. | Longer transit distances than Igoumenitsa would result in a less efficient environmental performance, though this was not the determining factor for exclusion. | <b>Not preferred.</b><br>Screened out primarily due to lack of secured commercial/bidder availability, not due to a technical or regulatory deficiency.         |
| <b>Other Western Greek Ports (Screened Out Options)</b> | Compliance status varies by port and was not assessed in detail, as these options were                                                                    | Excluded due to insufficient draft, limited infrastructure, or excessive distance from                                                                                 | Not assessed in detail, as these ports were excluded on technical grounds before                                                                       | Not assessed in detail; longer sailing distances would generally result in higher emissions, but                                                                | <b>Not preferred.</b><br>Screened out. Excluded at an early stage due to technical constraints (draft, infrastructure,                                          |

| OPTION | REGULATORY COMPATIBILITY                                   | TECHNICAL FEASIBILITY                                  | FINANCIAL FEASIBILITY                | ENVIRONMENTAL COMPATIBILITY           | OVERALL ASSESSMENT                                                  |
|--------|------------------------------------------------------------|--------------------------------------------------------|--------------------------------------|---------------------------------------|---------------------------------------------------------------------|
|        | excluded at the screening stage before further evaluation. | the offshore location, depending on the specific port. | financial feasibility was evaluated. | this was not the basis for exclusion. | distance), prior to detailed financial or environmental assessment. |

### 7.2.11.2 Heliport

A range of existing aviation facilities in western Greece was screened as potential helicopter bases to support personnel transfers and emergency response for the Asopus-1 exploration drilling programme. The screening considered only certified facilities and focused on operational experience in safely supporting helicopter operations, proximity to the offshore site, available infrastructure and capacity during the planned drilling window, and compatibility with a short-duration offshore exploration campaign.

Several facilities were excluded at an early stage due to limited aviation infrastructure, lack of experience with offshore helicopter operations, or operational constraints. Corfu International Airport (CFU) was identified as the most suitable option due to its established experience in safely supporting helicopter operations, relatively short distance to the well location, and sufficient installed capacity outside the peak tourism season. The reduced flight distance and use of existing infrastructure minimise helicopter flight time, fuel consumption, and associated environmental impacts.

**Table 7-11: Heliport Location Alternative Analysis**

| OPTION                                                  | REGULATORY COMPATIBILITY                                                                                                                                    | TECHNICAL FEASIBILITY                                                                                                         | FINANCIAL FEASIBILITY                                                                                                                 | ENVIRONMENTAL COMPATIBILITY                                                                                                                          | OVERALL ASSESSMENT                                                                                                                                                               |
|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Corfu International Airport (Helicopter Base)</b>    | Compliant with civil aviation and offshore helicopter operational requirements, with no additional certification or infrastructure required.                | Certified airport with established operational experience supporting offshore helicopter operations.                          | Adequate capacity and infrastructure are available during the planned drilling period, requiring no additional investment or upgrade. | Shorter flight distances to the offshore location reduce fuel consumption, emissions, and airborne noise impacts relative to alternative facilities. | <b>Preferred alternative.</b> Provides the most efficient and operationally suitable aviation support solution for the Project.                                                  |
| <b>Alternative Regional Airports (Screened Options)</b> | Compliance would depend on certification status of the specific facility, which was not confirmed for offshore helicopter operations in the cases reviewed. | Several facilities lacked sufficient offshore helicopter operational experience or confirmed capacity to support the Project. | Not assessed in detail, as these options were excluded on technical/operational grounds before financial feasibility was evaluated.   | Not assessed in detail; greater distances would generally increase flight time, emissions, and noise, but this was not the basis for exclusion.      | <b>Not preferred.</b> Excluded at an early stage due to limited offshore helicopter operational experience or capacity, prior to detailed financial or environmental assessment. |



### 7.2.11.3 Support Vessels

Support vessel requirements for the Asopus-1 exploration drilling programme were evaluated to ensure operational efficiency and safety while minimising marine traffic, fuel consumption and environmental disturbance. Given the short duration of the drilling campaign, the limited logistics demands of a single exploration well, and the proximity of the selected shore base at Igoumenitsa, a reduced support vessel configuration was selected.

The Project will utilise two platform supply vessels (PSVs), instead of the three-vessel configuration typically used in other offshore drilling campaigns. This approach provides an appropriate balance between operational safety and environmental performance, based on Energean's assessment of the well-specific logistics demand for a single exploration well with a drillship. One vessel will typically remain in the vicinity of the drilling unit, while the second will undertake logistics transits between the drilling location and the shore base.

The selected configuration is supported by the capabilities of modern drillships, which have significant onboard storage capacity and advanced logistics management systems, reducing the need for additional dedicated supply vessels. The use of two vessels, combined with shorter sailing distances to Igoumenitsa, reduces overall vessel movements, fuel consumption, atmospheric emissions and underwater noise compared with a three-vessel configuration.

This reduced vessel approach is considered technically feasible, operationally appropriate and consistent with minimisation-by-design principles for a short-duration offshore exploration well.

**Table 7-12: Support Vessels Alternative Analysis**

| OPTION                                                      | REGULATORY COMPATIBILITY                                                                    | TECHNICAL FEASIBILITY                                                           | FINANCIAL FEASIBILITY                                                                                     | ENVIRONMENTAL COMPATIBILITY                                                                                             | OVERALL ASSESSMENT                                                                                                                        |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| <b>2-PSV Configuration</b>                                  | Fully compliant with applicable maritime regulations and offshore operational requirements. | Supported by modern drillship storage capacity and efficient logistics systems. | Optimised configuration reduces vessel hire and operating costs while maintaining operational continuity. | Reduced vessel movements, fuel consumption, emissions, and underwater noise compared with a three-vessel configuration. | <b>Preferred alternative.</b><br>Achieves a balanced, minimised logistics footprint while maintaining operational safety and efficiency.  |
| <b>3-PSV Configuration (Higher Vessel Intensity Option)</b> | Fully compliant with applicable maritime safety and operational regulations.                | Standard configuration used in comparable offshore drilling campaigns.          | Higher vessel charter and operating costs due to increased fleet size and logistics complexity.           | Increased vessel traffic results in higher fuel consumption, emissions, and underwater noise.                           | <b>Not preferred.</b><br>Technically viable but less efficient in terms of emissions and logistics for a short-duration exploration well. |

## 7.3 Evaluation of Alternatives

A structured alternatives assessment was undertaken for the Asopus-1 exploration drilling programme to identify the most appropriate options for achieving the Project objectives while minimising environmental impacts and operational risks.

The assessment considered reasonable alternatives for key elements of the Project, including the well location, well trajectory, drilling unit type, drilling strategy, drilling fluids, cuttings management, cementing approach, lighting, abandonment strategy, and supporting logistics infrastructure.

Each alternative was evaluated against four criteria:

- Regulatory compatibility – consistency with applicable legislation, permit requirements, and recognised industry standards;
- Technical feasibility – suitability of the option to safely achieve the Project objectives under the anticipated site conditions;
- Financial feasibility – relative cost and operational efficiency of the option;
- Environmental compatibility – potential to avoid or minimise environmental disturbance, emissions, waste generation, and resource use.

For each criterion, alternatives are assessed qualitatively using the following rating system:

**Table 7-13: Alternatives Assessment Rating System**

| ASSESSMENT CRITERIA                                                       | RATING OPTIONS               | DESCRIPTION                                                                                                                                                                  |
|---------------------------------------------------------------------------|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Regulatory compatibility                                                  | Compliant                    | Meets applicable legislation, permit requirements, and recognised industry standards without qualification.                                                                  |
|                                                                           | Conditionally compliant      | Compliance is achievable in principle but subject to permit conditions, competent authority approval, or infrastructure/site-specific requirements not met at this location. |
|                                                                           | Not compliant / Not feasible | Cannot meet applicable legislation or permit requirements; excluded on regulatory grounds.                                                                                   |
| Technical feasibility, financial feasibility, Environmental compatibility | Favourable                   | Fully suitable, with no significant limitations identified.                                                                                                                  |
|                                                                           | Acceptable with limitations  | Suitable in principle, but with identified limitations, disadvantages, or reduced efficiency relative to the favourable option.                                              |
|                                                                           | Unfavourable                 | Presents significant limitations, increased impacts, or reduced effectiveness.                                                                                               |
|                                                                           | Not feasible                 | Unable to meet technical, financial, or environmental requirements; excluded from further consideration.                                                                     |
| Overall assessment                                                        | Preferred                    | Represents the most appropriate balance across all criteria; selected option.                                                                                                |
|                                                                           | Not preferred                | Viable in principle but presents a less favourable balance than the preferred option.                                                                                        |
|                                                                           | Not feasible                 | Excluded outright on regulatory, technical, or operational grounds.                                                                                                          |

The assessment was undertaken using engineering information, technical data, environmental considerations, operational requirements, and industry experience. Where alternatives were found to be technically or regulatorily infeasible, they were screened out and not considered further.

The preferred option for each Project component was selected on the basis that it represented the most appropriate balance between technical performance, environmental protection, operational efficiency, and regulatory compliance.

Table 7-14 summarises the assessment for all topic areas (well location, trajectory, MODU, drilling strategy, fluids, cementing, lighting, abandonment, logistics, etc.).

**Table 7-14: Summary of Alternative Assessment for the Asopus-1 exploration well**

| AREA              | OPTION                                          | REGULATORY                   | TECHNICAL                   | FINANCIAL                   | ENVIRONMENT                 | OVERALL                                                                                                                                                   |
|-------------------|-------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Well Location     | 1A                                              | Compliant                    | Favourable                  | Favourable                  | Favourable                  | <b>Preferred</b> – optimal structural position                                                                                                            |
|                   | 1B                                              | Compliant                    | Acceptable with limitations | Acceptable with limitations | Favourable                  | <b>Not preferred</b> – lower reservoir quality                                                                                                            |
|                   | Northern alternatives                           | Compliant                    | Acceptable with limitations | Acceptable with limitations | Favourable                  | <b>Not preferred</b> – no geological advantage                                                                                                            |
| Well Trajectory   | Vertical / low inclination                      | Compliant                    | Favourable                  | Favourable                  | Favourable                  | <b>Preferred</b> – simplest and most efficient trajectory                                                                                                 |
|                   | High inclination                                | Compliant                    | Acceptable with limitations | Acceptable with limitations | Acceptable with limitations | <b>Not preferred</b> – added complexity                                                                                                                   |
|                   | Horizontal                                      | Compliant                    | Unfavourable                | Unfavourable                | Acceptable with limitations | <b>Not preferred</b> – unnecessary for exploration                                                                                                        |
| MODU Type         | Drillship (DP)                                  | Compliant                    | Favourable                  | Favourable                  | Acceptable with limitations | <b>Preferred</b> – safest deepwater solution                                                                                                              |
|                   | Semi-submersible (moored or DP, unit-dependent) | Compliant                    | Acceptable with limitations | Acceptable with limitations | Acceptable with limitations | <b>Not preferred</b> – station-keeping approach depends on the specific unit; mooring, where required, adds seabed footprint not present with a drillship |
|                   | Jack-up                                         | Not compliant / Not feasible | Not feasible                | Not feasible                | Not feasible                | <b>Not preferred.</b> Not feasible – water depth exceeds jack-up operating limits                                                                         |
| Drilling Strategy | Single campaign                                 | Compliant                    | Favourable                  | Favourable                  | Favourable                  | <b>Preferred</b> – reduced logistics and emissions                                                                                                        |
|                   | Staged campaign                                 | Compliant                    | Acceptable with limitations | Acceptable with limitations | Acceptable with limitations | <b>Not preferred</b> – increased vessel movements                                                                                                         |

| AREA                | OPTION                                        | REGULATORY                   | TECHNICAL                   | FINANCIAL                   | ENVIRONMENT                 | OVERALL                                                                                       |
|---------------------|-----------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------------------------------------------------------------------------|
| Drilling Fluids     | WBM only                                      | Compliant                    | Favourable                  | Favourable                  | Favourable                  | <b>Preferred</b> – lowest environmental risk system                                           |
|                     | NADF only                                     | Not compliant / Not feasible | Not feasible                | Not feasible                | Not feasible                | <b>Not preferred.</b> Not feasible – tied to riserless-section application                    |
|                     | Hybrid system (WBM primary, contingency NADF) | Compliant                    | Favourable                  | Acceptable with limitations | Acceptable with limitations | <b>Not preferred.</b> Not preferred – standard practice but adds operational complexity       |
| Cuttings Management | WBM with Cuttings Discharge to Sea            | Compliant                    | Favourable                  | Favourable                  | Acceptable with limitations | <b>Preferred</b> – proportionate for exploration volumes                                      |
|                     | NADF with Cuttings Management / Discharge     | Not compliant / Not feasible | Not feasible                | Not applicable              | Not applicable              | <b>Not preferred.</b> Not feasible – excluded on the same basis as the NADF fluids conclusion |
|                     | Offshore Reinjection of Cuttings and Fluids   | Conditionally compliant      | Not feasible                | Not feasible                | Not applicable              | <b>Not preferred.</b> Not feasible – no injection well or infrastructure                      |
|                     | Riserless Skip-and-Ship                       | Conditionally compliant      | Not feasible                | Acceptable with limitations | Acceptable with limitations | <b>Not preferred.</b> Not feasible – water depth exceeds riserless mud recovery               |
|                     | Riser-Based Skip-and-Ship                     | Compliant                    | Favourable                  | Acceptable with limitations | Acceptable with limitations | <b>Not preferred</b> – technically feasible but adds unnecessary logistics                    |
| Cementing           | Conventional cement                           | Compliant                    | Favourable                  | Favourable                  | Favourable                  | <b>Preferred</b> – proven long-term barrier integrity                                         |
|                     | Low-carbon cement                             | Conditionally compliant      | Acceptable with limitations | Acceptable with limitations | Acceptable with limitations | <b>Not preferred</b> – limited deepwater track record                                         |
|                     | Mechanical barriers only                      | Not compliant / Not feasible | Not feasible                | Not applicable              | Not applicable              | <b>Not preferred.</b> Not feasible – cannot meet permanent                                    |

| AREA             | OPTION                        | REGULATORY                   | TECHNICAL                   | FINANCIAL                   | ENVIRONMENT                 | OVERALL                                                                             |
|------------------|-------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------------------------------------------------------------------------------|
|                  |                               |                              |                             |                             |                             | well barrier requirements                                                           |
| Lighting         | Standard MODU lighting        | Compliant                    | Favourable                  | Favourable                  | Acceptable with limitations | <b>Preferred</b> – required for navigation and aviation safety                      |
|                  | Spectral-modified lighting    | Conditionally compliant      | Unfavourable                | Acceptable with limitations | Acceptable with limitations | <b>Not preferred.</b> Not feasible – cannot replace mandatory lighting requirements |
|                  | Reduced/no lighting           | Not compliant / Not feasible | Not feasible                | Not applicable              | Not applicable              | <b>Not preferred.</b> Not feasible – non-compliant with COLREGS/SOLAS               |
| Well Abandonment | Leave wellhead in place       | Compliant                    | Favourable                  | Favourable                  | Favourable                  | <b>Preferred</b> – minimises seabed disturbance                                     |
|                  | Full removal                  | Compliant                    | Favourable                  | Acceptable with limitations | Acceptable with limitations | <b>Not preferred</b> – additional seabed intervention without clear advantage       |
|                  | Leave un-abandoned            | Not compliant / Not feasible | Not feasible                | Not applicable              | Not applicable              | <b>Not preferred.</b> Not feasible – regulatory breach                              |
| Shore Base       | Igoumenitsa Port              | Compliant                    | Favourable                  | Favourable                  | Favourable                  | <b>Preferred</b> – closest viable port, lowest emissions                            |
|                  | Patras Port                   | Compliant                    | Favourable                  | Acceptable with limitations | Acceptable with limitations | <b>Not preferred</b> – longer transit distances                                     |
|                  | Thisvi Port                   | Conditionally compliant      | Acceptable with limitations | Unfavourable                | Acceptable with limitations | <b>Not preferred</b> – bidder availability not secured                              |
| Helicopter Base  | Corfu Airport                 | Compliant                    | Favourable                  | Favourable                  | Favourable                  | <b>Preferred</b> – established offshore aviation experience                         |
|                  | Alternative regional airports | Conditionally compliant      | Unfavourable                | Not assessed in detail      | Not assessed in detail      | <b>Not preferred</b> – limited offshore helicopter operational experience           |
|                  | Two PSVs                      | Compliant                    | Favourable                  | Favourable                  | Favourable                  | <b>Preferred</b> – minimised                                                        |

| AREA            | OPTION     | REGULATORY | TECHNICAL  | FINANCIAL                   | ENVIRONMENT                 | OVERALL                                                                              |
|-----------------|------------|------------|------------|-----------------------------|-----------------------------|--------------------------------------------------------------------------------------|
| Support Vessels |            |            |            |                             |                             | vessel traffic and emissions                                                         |
|                 | Three PSVs | Compliant  | Favourable | Acceptable with limitations | Acceptable with limitations | <b>Not preferred</b><br>– higher logistics footprint than required for this campaign |

## 7.4 Conclusion

The alternatives assessment for the Asopus-1 exploration well was undertaken during the early stages of project design, when design and logistics choices could still influence environmental performance, safety, technical feasibility and operational efficiency. A range of reasonable alternatives was considered and evaluated against common criteria, including regulatory compatibility, technical feasibility, environmental performance, logistics efficiency and proportionality to the limited scope and duration of a single offshore exploration well.

The assessment identified a **preferred project configuration** comprising:

- selection of the most geologically favourable **well location** (1A).
- use of a simple **vertical** or low-inclination well trajectory.
- deployment of a **drillship** suitable for deepwater conditions.
- execution of a **single drilling campaign** to minimise mobilisation and emissions.
- use of **water-based drilling fluids** with discharge of cuttings to sea under permit conditions.
- Conventional oilfield **cement systems** to ensure robust long-term well integrity.
- standard regulatory-compliant **lighting** required for navigation and aviation safety.
- a proportionate **abandonment strategy** including retention of the wellhead following P&A.
- selection of the closest suitable **shore base (Igoumenitsa)** and established helicopter base (Corfu International Airport).
- optimisation of logistics through a reduced configuration of **two PSVs**.

The selected configuration makes use of existing infrastructure and established offshore drilling practices while reducing the duration and extent of offshore activities. It avoids seabed disturbance associated with anchoring, limits vessel and aviation movements with the closest suitable logistics facilities, avoids emissions associated with well testing and flaring, and minimises operational complexity consistent with the objectives of a single exploration well.

Alternatives not selected were generally associated with increased environmental disturbance, greater logistics requirements, higher operational risk, or additional technical complexity without delivering a corresponding environmental or operational benefit. In several cases, options that may be appropriate for appraisal or development projects were considered disproportionate for a short-duration exploration programme. Other alternatives were screened out because they were not technically feasible or could not meet applicable regulatory requirements.



The No-Action Alternative was also considered. Although this option would avoid project-related environmental and social effects, it would not meet the exploration objectives of the Project, would prevent acquisition of the geological and reservoir information sought through the well, and would not fulfil the minimum work obligations associated with the Block 2 Lease Agreement.

On this basis, the selected Project configuration is considered to represent the preferred option for the Asopus-1 exploration drilling programme. It provides an appropriate balance between environmental protection, safety, technical feasibility, regulatory compliance and operational efficiency, consistent with good international industry practice for offshore exploration activities.

## 8 Baseline environmental conditions

Section 8 presents a summary of the findings of the 2nd stage Environmental and Social Baseline Study (ESBS) undertaken for the Project. The information presented herein is derived primarily from the ESBS, which is included as Annex 02 of this ESIA together with its accompanying specialist technical studies. This section summarizes the baseline conditions relevant to the environmental and social impact assessment, whereas the full ESBS (Annex 02) provides the complete baseline characterization, including detailed methodologies, datasets, analyses, results, and supporting technical information.

The preparation of the ESBS is a mandatory requirement under the Greek legislative framework, specifically Article 12.14 of the Lease Agreement, which was subsequently ratified by Law 4525/2018, which requires the documentation of baseline environmental conditions prior to the commencement of offshore activities. The baseline establishes the reference conditions against which potential future environmental changes attributable to the Project can be assessed. In addition, it fulfils the baseline requirements established under the Strategic Environmental Assessment (SEA) Approval for the Ionian Sea (Approval No. 30373/03.07.2017).

The 2nd stage ESBS was prepared by the Environmental Consultant (LDK Consultants S.A. and RSK International Projects Group) and integrates both secondary and primary environmental data to characterize the wider Block 2 concession area and the immediate Project area.

Secondary information comprises an extensive review of published scientific literature and official environmental databases, including the European Marine Observation and Data Network (EMODnet), the Water Information System for Europe (WISE), the European Atlas of the Seas, and the IUCN Red List, together with information compiled during the 1st stage ESBS for the Block 2 concession area (prepared by RINA in 2018), which provided the initial characterization of the wider concession area.

Primary data were collected through two dedicated offshore survey campaigns (LOT 01 – Geophysical Survey and LOT 02 – Environmental Survey) undertaken from the survey vessel M/V ECO ONE. Lighthouse SpA was appointed by Energean to execute the offshore surveys, supported by EcoTechSystems Srl for environmental sampling and laboratory analyses, and Bluemetoccean Srl for oceanographic current measurements and underwater acoustic analyses.

The LOT 01 Geophysical Survey was conducted between 5 and 27 April 2026 over an area of approximately 100.2 km<sup>2</sup>. The objectives of the survey were to characterize seabed morphology, identify potential geohazards, and investigate underwater cultural heritage. The survey primarily employed a Kongsberg HUGIN 4500+ Autonomous Underwater Vehicle (AUV) equipped with a Multibeam Echosounder (MBES), High-resolution Interferometric Synthetic Aperture Sonar (HISAS), Sub-Bottom Profiler (SBP), and magnetometer. High-altitude AUV missions were undertaken for acoustic seabed mapping, while low-altitude missions employed ultra-high-definition optical cameras (Cathx) to verify benthic biocenoses and investigate selected archaeological targets. The campaign also included the deployment of a moored Acoustic Doppler Current Profiler (ADCP) with single-point current meters to characterize oceanographic current dynamics, together with a Passive Acoustic Monitoring (PAM) system comprising a broadband hydrophone and an RTSYS Sylence-LP autonomous recorder to establish the underwater acoustic baseline.

The LOT 02 Environmental Survey was undertaken between 14–17 March and 23 March–1 April 2026 to characterize the physical, chemical, and biological conditions of the marine environment. Sampling was

conducted at 16 stations, including stations surrounding the proposed well location, northern stations, blank stations, and three regional reference stations (Othonoi Ref, Kerkyra Ref, and Italy Ref).

Water-column investigations included profiling with a CTD multiparameter probe to measure conductivity, temperature, pressure, pH, dissolved oxygen, turbidity, and fluorescence. Water samples were collected at surface, mid-water, and near-bottom depths for the analysis of total suspended solids, total organic carbon, nutrients, trace metals, hydrocarbons, and phytoplankton communities. Environmental DNA (eDNA) samples were collected exclusively from near-bottom waters. Zooplankton communities were sampled using vertical net tows through the upper 200 m of the water column, while ichthyoplankton (fish larvae) was sampled using oblique net tows along three dedicated 1 km transects.

Sediment samples were collected at all stations using a Van Veen grab for physicochemical characterization, including grain-size distribution, organic matter, trace metals, hydrocarbons, microplastics, and macrozoobenthic community assessments. High-resolution AUV imagery acquired during the geophysical survey was also incorporated into the environmental baseline to support the characterization of benthic habitats and assess the spatial distribution of seafloor marine litter.

Dedicated marine fauna monitoring was undertaken throughout both survey campaigns. Daytime visual observations were conducted by Marine Mammal Observers (MMOs) and avifauna specialists to record cetaceans, sea turtles, and seabirds, including species identification and behavioural observations. Night-time monitoring was undertaken using the Passive Acoustic Monitoring (PAM) system.

The phase 2 ESBS (provided as Annex 02 of the ESIA) is supported by a suite of specialist technical reports, including the List of marine fish fauna species (ESBS Annex 01), Geophysical Survey Report (ESBS Annex 02), Report on possible ruins of an ancient shipwreck (ESBS Annex 03A), Archaeological Baseline Assessment Report (ESBS Annex 03B), Current Meter Data Analysis Report (ESBS Annex 04), Acoustic Data Analysis Report (ESBS Annex 05), and Environmental Baseline Survey Report (ESBS Annex 06). Additionally, the eDNA study is provided as a stand-alone document in Annex 03 of the ESIA.

## 8.1 Study area

In accordance with Annex II of Ministerial Decision (MD) 170225/2014 (Government Gazette 135/B/20.01.2014), which specifies the content of environmental licensing documentation for Category A projects pursuant to Article 11 of Law 4014/2011, the minimum study area for point projects classified under Subcategory A1 and located outside settlement boundaries, as is the case for the Asopus-1 exploration well, extends to a radius of 2 km from the project boundaries. However, as explicitly stated in the MD, this distance represents the minimum regulatory extent of the study area and should not be interpreted as the maximum area potentially affected by the Project. Accordingly, the spatial extent of the baseline characterization presented in the 2nd Stage ESBS was established on a receptor-specific basis, taking into account the nature and scale of the Project, the sensitivity and characteristics of the environmental and social receptors, and the anticipated spatial extent of potential direct, indirect, cumulative, and transboundary effects. Consequently, the spatial coverage of the baseline information varies according to the environmental and social topic under consideration. The study area for the field surveys was extended to a 10 km radius from the Project boundaries, providing an appropriate framework for the collection and assessment of baseline environmental data. For mobile biotic receptors, a 20 km radius was adopted due to the greater mobility of these species.

With regard to the Project's shorebase facilities, these will be located at the existing Port of Igoumenitsa. In accordance with Annex II of Ministerial Decision 170225/2014, the study area was defined as a minimum distance of 1 km from the boundaries of point and area projects or activities classified under Subcategory A2 and located outside settlement boundaries or approved urban plans.

For the assessment of the socio-economic environment, a broader study area was adopted to reflect the administrative areas associated with the Project and its shorebase facilities. At the administrative level, the Regional Unit of Corfu represents the closest onshore administrative area to the Asopus-1 exploration well and Block 2 and forms part of the Ionian Islands Region. Furthermore, the Municipality of Igoumenitsa constitutes the principal onshore administrative area currently planned to be associated with the Project's maritime logistics activities, as the Port of Igoumenitsa is expected to serve as the operational base for Platform Supply Vessel (PSV) movements supporting the offshore drilling operations.

## 8.2 Climate and bioclimatic characteristics

### 8.2.1 Climatic characteristics

The climate of the broader Northern Ionian Sea, including the Asopus-1 exploration well area, is classified as a Mediterranean hot-summer climate according to the Koppen-Geiger climate classification for the period 1985–2014 (Lionello et al., 2023, Gutiérrez et al., 2021). The regional climate is influenced by large-scale atmospheric circulation systems, including the Azores Anticyclone, the Siberian Winter Anticyclone, the Icelandic Low, and the South Asian Thermal Low.

The annual climatic cycle is characterised by two principal seasons separated by transitional periods. During winter (mid-November to March), the region is influenced by the passage of cyclonic systems and associated low-pressure conditions, resulting in relatively low temperatures, increased cloud cover, higher precipitation, and predominantly northeasterly winds. In contrast, summer (June to September) is generally characterised by stable atmospheric conditions, clear skies, limited precipitation, and the development of local sea- and land-breeze circulations associated with land-sea temperature differences. The transitional periods, particularly autumn, are associated with increased rainfall resulting from interactions between relatively warm sea surface temperatures and cooler continental air masses.

Long-term climatological data from the Hellenic National Meteorological Service (1971–2000) for the island of Othonoi indicate mean monthly temperatures ranging from 8.3 °C in January to 25.0 °C in July, while mean monthly precipitation ranges from 8.3 mm in July to 178.6 mm in November. Meteorological data from the National Observatory of Athens (2010–2019) for Igoumenitsa, the nearest mainland meteorological station to the Project area, indicate average monthly temperatures ranging from 8.6 °C in January to 26.9 °C in August, with monthly precipitation varying from 10 mm in July and August to 230 mm in November.

A 10-year MET-OCEAN hindcast study (1 January 2015 to 31 December 2024) undertaken by SAT-OCEAN indicates that winds at the Asopus-1 location predominantly originate from the north-northwest (NNW), with typical wind speeds between 5 and 10 m/s. Between October and March, the frequency of wind speeds exceeding 15 m/s increases, particularly during January and February, with these stronger winds occurring predominantly from the NNW, north (N), and south-southeast (SSE).

Meteorological observations collected during the offshore survey campaigns were generally consistent with these regional conditions. During LOT 01, comprising 373 hours of acoustic and visual observations, horizontal visibility exceeded 5 km throughout the survey period, while no precipitation was recorded. Prevailing winds originated from the north and northwest, with wind conditions most frequently corresponding to Beaufort Force 4 (approximately 30%) and Beaufort Force 3 (approximately 27%).

During LOT 02, 115 hours of visual observations were undertaken. Horizontal visibility exceeded 5 km for 96% of the survey period. No precipitation was recorded during 87.1% of the observations, while light rain and moderate rain occurred during 11.1% and 1.5% of the observations, respectively. Prevailing winds originated from the northwest (29%), southwest (14%), and north (10%), with wind conditions most frequently corresponding to Beaufort Force 4 (45%), Beaufort Force 5 (24%), and Beaufort Force 3 (14%). Sea conditions were predominantly classified as choppy, while swell height was generally low (<2 m).

## 8.2.2 Oceanographic characteristics

The Mediterranean Sea is a concentration basin, where evaporation exceeds the combined inputs from precipitation and river runoff. This hydrological imbalance drives an anti-estuarine circulation, whereby relatively low-salinity Atlantic waters enter the Mediterranean, become warmer and more saline as they circulate eastwards, and subsequently contribute to the formation of denser water masses that are exported towards the western Mediterranean (Coll et al., 2010; Otero & Mytilineou, 2022).

The principal water masses in the Ionian Sea comprise Modified Atlantic Water in the surface layer, Levantine Intermediate Water between approximately 150 and 500 m depth, and Eastern Mediterranean Deep Water below approximately 1,600 m (Schlitzer et al., 1991; Malanotte-Rizzoli et al., 1997). Ocean circulation in the northern Ionian Sea is also influenced by quasi-decadal reversals of the North Ionian Gyre, which affect the thermohaline characteristics of the basin (Borzelli et al., 2009; Gacic et al., 2010; Bensi et al., 2016). Below approximately 300–500 m, the water column is generally characterized by relatively uniform temperatures ranging from 13.5 °C to 15.5 °C and salinity between 37.5 and 39.5 PSU (Coll et al., 2010).

A 10-year MET-OCEAN hindcast study (1 January 2015 to 31 December 2024) undertaken by SAT-OCEAN indicates seasonal variability in surface circulation at the Asopus-1 location. Surface currents predominantly flow towards the north to north-northeast between October and May, shifting towards the east-southeast to southeast during June to September. In contrast, deeper currents show limited seasonal variability. Below approximately 300 m, currents generally flow towards the northwest at velocities below 0.2 m/s, while below approximately 800 m, they are predominantly directed towards the north-northeast with velocities generally below 1 m/s.

Current measurements were collected from a mooring equipped with single-point current meters, deployed between 5 and 27 April 2026 (LOT01) at a location approximately midway between Corfu and Italy (coordinates: 333412.13 mE, 4374226.35 mN, WGS84-UTM34N). Near-seabed measurements indicated stable current conditions, with velocities generally below 0.10 m/s and a predominant south-southeasterly flow.

During LOT 02, continuous conductivity, temperature and depth profiling was undertaken to characterize the thermohaline structure of the water column. A vertically homogeneous surface layer extended to approximately 95 m depth, with temperatures between 16 and 17 °C and salinity below 38.8 PSU, consistent

with the presence of Modified Atlantic Water. Between approximately 100 and 250 m, a marked thermohaline transition was observed, with salinity reaching or exceeding 39.1 PSU, indicating the presence of Levantine Intermediate Water (Malanotte-Rizzoli et al., 1997, 1999; Menna et al., 2021; Fedele et al., 2022; Mallil et al., 2022). At the planned drilling depth of the Asopus-1 well (842.5 m), the water column exhibited typical Eastern Mediterranean deep-water conditions, with a temperature of approximately 13.8 °C, salinity of 38.8 PSU, and dissolved oxygen concentrations of approximately 4.2 mL/L.

### 8.2.3 Bioclimatic Characteristics

The Northern Ionian Sea is characterised by oligotrophic conditions, with low nutrient availability and limited primary productivity, which are typical features of the Mediterranean marine environment (Otero & Mytilineou, 2019).

Data collected during the LOT 02 Environmental Survey Campaign (14–17 March and 23 March–1 April 2026) were consistent with these regional characteristics. Nutrient analyses showed that Total Nitrogen concentrations were below the analytical limit of quantification (LoQ = 1 mg/L) throughout the water column, while nitrite (LoQ = 0.002 mg/L N) and nitrate (LoQ = 0.005 mg/L N) concentrations were also below quantification limits around the Asopus-1 well location. Total Organic Carbon concentrations in surface sediments were low ( $0.10 \pm 0.07\%$  dry weight), and phytoplankton biomass, expressed as chlorophyll-a, reached a maximum of 0.33 µg/L, indicating low primary productivity within the Project area (Barbieux et al., 2019).

### 8.2.4 Climate Change – Extreme Weather Events

The Mediterranean basin is experiencing warming at a rate approximately 20% higher than the global average (Lionello & Scarascia, 2018). Regional climate projections based on EURO-CORDEX downscaled models indicate an increase in the frequency of days with maximum temperatures exceeding 40 °C under both 2 °C and 4 °C global warming scenarios (Gutiérrez et al., 2021). Sea surface temperatures in the Mediterranean have shown an increasing trend since the 1970s, contributing to changes in the distribution of sea surface temperature patterns and facilitating the expansion of warm-water non-indigenous species within the basin (Zenetos et al., 2022). Climate projections also indicate continued sea-level rise throughout the 21st century under different emission scenarios, including RCP4.5 and RCP8.5, with potential implications for coastal areas, including increased coastal erosion risks (Kopp et al., 2014; Marcos et al., 2023).

For the northern Ionian Sea, including the Asopus-1 well area, regional climate projections indicate changes in temperature and hydrological conditions associated with future warming. Increased atmospheric temperatures are expected to result in higher atmospheric moisture content in accordance with the Clausius–Clapeyron relationship (Lionello & Scarascia, 2020). While climate models project an overall reduction in annual precipitation across much of the Mediterranean basin (approximately 4% per degree Celsius of warming; Lionello & Scarascia, 2018), the northern Mediterranean sub-region, including the wider Project area, presents different model responses, with projections indicating potential increases in extreme precipitation events (Lionello & Scarascia, 2020).



Within the marine environment, projected increases in seawater temperature are expected to occur alongside ongoing ocean acidification associated with increased atmospheric CO<sub>2</sub> concentrations (Otero & Mytilineou, 2019). These changes may affect marine ecosystems through alterations in biological processes, including calcification rates in marine organisms, with potential implications for planktonic communities and other sensitive marine habitats (Otero & Mytilineou, 2019).

Regarding extreme oceanographic events, tsunamis in the Mediterranean are primarily associated with seismotectonic processes, including activity along the Hellenic Arc, regional tectonic movements, and submarine slope instability. Historical records indicate that the wider Ionian Sea and Hellenic Shelf have been affected by tsunami events and weather-related meteotsunamis, with palaeo-tsunami evidence identified along the coastlines of Corfu. Based on regional seismotectonic characteristics and the currently available geophysical information, the likelihood of a tsunami originating directly from the Asopus-1 well location is considered low, given its distance from the main active subduction zones of the Hellenic Arc and the absence of identified local conditions typically associated with major submarine slope failure mechanisms.

## 8.3 Morphological And Topographical Characteristics

### 8.3.1 Bathymetry

The Asopus-1 exploration well is located in the northern part of the Ionian Sea. The Ionian Sea constitutes a major marine region of the Eastern Mediterranean and represents the deepest marine basin within the Mediterranean. The basin is characterized by extensive submarine canyon systems, with depths exceeding 4,000 m and a maximum recorded depth of over 5,100 m at the Vavilov Deep, located approximately 30 miles southwest of the Peloponnese (Sammartino et al., 2022).

In the northern Ionian Sea, regional bathymetry varies considerably. From the continental shelf adjacent to the Diapontia Islands, the seabed descends along a submarine slope towards the central-eastern sector, reaching depths of approximately 1,200 m along the margin of Corfu. The Block 2 concession area is located southwest of the base of this regional slope, at water depths generally ranging between 750 and 1,200 m. Within the concession area, the seabed forms a relatively gentle and gradually rising profile towards the Italian continental slope over a distance of approximately 100 km.

Detailed bathymetric mapping undertaken during the LOT 01 Geophysical Survey Campaign, using a MBES and HISAS, further characterized the local seabed morphology. Survey results indicate a gradual increase in water depth from west to east, with recorded depths ranging from 754.08 m at the central western edge of the surveyed area to 924.08 m in the northeastern sector. The seabed is characterised by very gentle to gentle slopes, generally ranging between 0 and 10 degrees. At the Asopus-1 exploration well location, the water depth is approximately 842.5 m, with a local seabed slope of 1.3 degrees.

### 8.3.2 Seabed morphology

The macro-scale morphostructural framework of the Eastern Mediterranean includes major geological features such as the Hellenic Trench, Calabrian Arc, Apulian Escarpment, and Mediterranean Ridge (Otero

& Mytilineou, 2022). The northern Ionian Sea represents the southern continuation of the Adriatic Sea basin (Otero & Mytilineou, 2022). The Apulian Escarpment is a major structural feature, exceeding 1,000 m in height, which separates the Apulian Platform to the north from the Calabrian Arc accretionary prism to the south (Otero & Mytilineou, 2022). Along the western Greek margin, the seabed is characterized by submarine valleys and erosional features, including blind and V-shaped canyons (Otero & Mytilineou, 2022). The Asopus-1 exploration well is located on the distal sector of the Apulian Platform, away from the steep continental margins and submarine canyon systems developed further east along the Western Greek margin.

Desktop studies indicate that the local seabed morphology is influenced by a regional horst and graben tectonic setting associated with deep-seated normal faulting. This geological framework results in a step-like bathymetric profile with locally undulating and mound-like seabed features (Del Ben et al., 2015).

Results from the LOT 01 Geophysical Survey Campaign further characterized the local seabed morphology. The survey identified an articulated seafloor, with east–west oriented fault-related scarps contributing to a step-like morphology, with vertical offsets of several metres. The seabed is also affected by a mass transport deposit, characterized by elongated mound-like features oriented approximately perpendicular to the slope direction. Much of the deposit is covered by a low-reflectivity pelagic sediment layer, interpreted as fine-grained clay or silt, while locally the underlying consolidated sediments are exposed.

At the Asopus-1 well location, the mass transport deposit is exposed, forming a morphology characterized by grooves covered by fine sediments and intervening ridges composed of harder sediments, with heights ranging from approximately 0.2 to 1 m. The planned well location is situated within one of these grooves. Within a 500 m radius of the well location, harder sediment exposures locally increase seabed gradients along their flanks, with slopes reaching up to 10 degrees. No fault scarps were identified within this area.

### 8.3.3 Morphological characteristics in the terrestrial environment

With regards to the shorebase facilities, the broader study area falls within the Epirus Water District (EL05), which is one of the most mountainous regions of Greece. Mountainous areas account for approximately 70% of the total area of the Water District, while lowland areas represent approximately 15%.

Although the Port of Igoumenitsa is located within a coastal environment, the surrounding terrestrial landscape is predominantly characterized by mountainous terrain. The main exception occurs to the east, where the western margins of the Ladochori plain extend towards the port area. In this area, the lower slopes of Liotrivia Hill descend towards sea level, while the Igoumenitsa–Preveza National Road crosses the area mainly through cut sections excavated into the surrounding terrain.

### 8.3.4 Topographical Characteristics in the Terrestrial Environment

#### 8.3.4.1 Landscapes of outstanding natural beauty

Landscape is recognized as an important component of the environment and human surroundings under the European Landscape Convention, which was incorporated into Greek legislation through Law 3827/2010 (Government Gazette 30/A/25.02.2010). The Convention promotes the protection, management, and planning of landscapes, including areas of particular natural, cultural, or aesthetic value.

The Greek legislative framework provides for the designation and protection of landscapes of particular value, including Landscapes of Outstanding Natural Beauty under Law 1465/1950 and remarkable landscapes protected under Law 3937/2011 (Government Gazette 60/A/31.03.2011).

Within the study area considered for the shorebase facilities at the Port of Igoumenitsa, no designated Landscapes of Outstanding Natural Beauty or Protected Natural Monuments have been identified. According to the FILOTIS database, the nearest designated Landscape of Outstanding Natural Beauty is AT3011004 “Ekvoli Kalama”, located approximately 6.5 km southwest of the shorebase facilities.

#### 8.3.4.2 Landscapes of the Epirus region’s regional landscape area

According to the Revised Regional Spatial Framework and Landscape Strategy of the Region of Epirus (Ministerial Decision YPEN/DCHORS/78523/1208/05.11.2018, Government Gazette 286/AAP/28.11.2018), Article 14 “Landscape Strategy Directions” classifies landscapes within the Region of Epirus into four categories according to their value: International Value, National Value, Regional Value, and Particularly Degraded Landscapes.

- Landscapes of International Value: This category encompasses the Amvrakikos Gulf Area Zone, the Dodoni Valley Archaeological Site Zone, and the Nikopolis Archaeological Site Zone.
- Landscapes of National Value: This category includes the Wider Zagori Area Zone, the Wider Metsovo Area Zone, the Wider Northern Tzoumerka Area Zone, the Wider Konitsa–Mastorochochia–Grammos Area Zone, and the Wider Pogoni Area Zone.
- Landscapes of Regional Value: This category comprises the Lake Pamvotida and City of Ioannina Area Zone, the Wider Southern Tzoumerka Area Zone (Regional Unit of Arta), the Ionian Sea Coastal Zone (Regional Unit of Preveza), the Parga–Perdika–Syvota Coastal Zone, and the Kalamas Delta–Sagiada Coastal Zone.
- Particularly Degraded Landscapes: This category identifies areas requiring significant landscape rehabilitation, including the Linear Entrance Zones of the cities of Ioannina, Preveza, Arta, and Igoumenitsa. It also includes the Degraded Coastal Settlement Landscape Zone of Paralia Vrachos–Loutsa (Preveza) and the Extensive Open-Cast Extraction and Abandoned Quarry Zone of Ioannina.

The shorebase facilities are located in the wider Igoumenitsa area and are in proximity to the Linear Entrance Zone of Igoumenitsa, which is classified under the regional landscape strategy as a Particularly Degraded Landscape Zone.

#### 8.3.4.3 Areas Related to the European Landscape Convention, which was ratified by Law 3827/2010 (A’ 30)

The European Landscape Convention, also known as the Florence Convention, was ratified by Greece through Law 3827/2010 “Ratification of the European Landscape Convention” (Government Gazette 30/A/25.10.2010). The Convention aims to promote the protection, management, and planning of landscapes, as well as cooperation among European countries on landscape-related matters.

Under the European Landscape Convention, landscapes are recognized as an essential component of the human environment, reflecting the diversity of shared cultural and natural heritage and contributing to the

formation of identity. The Convention requires the establishment and implementation of landscape policies aimed at their protection, management, and planning.

According to Map P.2d of the Revised Regional Spatial Framework of the Region of Epirus, the closest Landscape Zones of Regional Value to the Project's onshore facilities are the Kalamas Delta–Sagiada Coastal Landscape Zone, located north and northwest of Igoumenitsa, and the Plataria–Syvota–Perdika–Parga Coastal Landscape Zone, extending south and southwest of the Project area.

## 8.4 Geological, tectonic, and sediment/soil characteristics

### 8.4.1 Geology in the marine environment

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The Eastern Mediterranean Sea is characterized geologically by the convergence between the African and Eurasian plates. The Asopus-1 exploration well is located within the southern sector of the Adria Microplate, a continental lithospheric block that is distinct from the main African Plate (Tugend et al., 2019). The well is situated on the Apulian Platform, a broad carbonate domain comprising a thick Mesozoic carbonate succession, reaching up to approximately 5 km in thickness, underlain by discontinuous Permo-Triassic siliciclastic continental sediments and Burano evaporites (Tugend et al., 2019).

The local geological setting is associated with a regional extensional tectonic regime, where deep-seated normal faults have affected the Apulian Platform, resulting in a horst and graben structural framework (Del Ben et al., 2015). At the Asopus-1 drilling location, the seabed is characterized by a very thin cover of post-Miocene sediments, with potential local structural influences associated with Messinian evaporite formations.

### 8.4.2 Sediment

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The sedimentary history of the northern Ionian Basin reflects a long stratigraphic evolution, with sediment deposition influenced by regional tectonic processes and characterized by turbiditic and gravity-driven deposits (Tugend et al., 2019). At the basin scale, superficial seafloor mapping indicates that the wider Project area is predominantly characterized by mud and muddy sand sediments (Spatola et al., 2025).

#### 8.4.2.1 Physicochemical measurements and macroscopic description

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Field measurements performed immediately after sample recovery indicated sediment temperatures of 13.5 – 15.6 °C, limited pH variability (7.79 – 7.93) and consistently negative ORP values (–169.4 to –120.9 mV), indicative of reducing conditions typical of fine-grained marine sediments. Macroscopic observations suggested highly homogeneous sedimentological conditions throughout the study area, with sediments generally described as “Clayey silt”, medium hydrated, odourless and devoid of shell fragments, plant remains or other noteworthy features.

#### 8.4.2.2 Grain-size and other physic-chemical variables

Grain-size laboratory analyses confirmed the absence of Gravel from all samples, while sand generally represented a minor fraction (< 15 %), except at Italy Ref (23.5 %). Pelitic fractions clearly predominated throughout the study area, with Silt and Clay together accounting for approximately 86 – 100% of the sediment matrix. According to both Folk and Shepard classifications, sediments were predominantly assigned to the “Mud” and “Silty clay” classes, respectively, confirming the granulometric homogeneity of the study area, with Italy Ref exhibiting a slightly coarser texture. Among the other physic-chemical variables investigated in the sediment samples, moisture content showed moderate variability across the study area, with generally higher values at Northern station group, Blank and Reference Stations than around Asopus-1, whereas sediment density remained remarkably uniform, reflecting the overall homogeneity of the investigated fine-grained deposits.

#### 8.4.2.3 Total Organic Carbon (TOC) and nutrients

TOC concentrations were generally low and frequently below the analytical LoQ (0.1 % d.s.), while carbonate contents exhibited limited spatial variability and consistently moderate concentrations. N-Tot and P-Tot also showed relatively homogeneous distributions across the study area, with no clear differences between well-site, Blank and Reference Stations. Overall, the investigated sediments were characterized by low organic-matter content and relatively uniform nutrient concentrations.

#### 8.4.2.4 Metals and metalloids

Among metals and metalloids, Cr VI remained consistently below the LoQ, whereas Sn and Hg were only sporadically detected at very low concentrations. Al and Fe were by far the most abundant elements, reflecting their predominantly lithogenic origin, while the remaining investigated metals generally occurred at concentrations within the order of magnitude of  $10^1$  mg kg<sup>-1</sup> d.s. Spatial variability was generally limited, although Northern station group tended to exhibit slightly higher concentrations than Asopus-1 station group and the Blank stations, while Italy Ref frequently showed comparatively lower values. Exceedances of the applicable reference values were identified for As, Ni and Cr-Tot. As exceeded both the HCMR ERL values and, at selected stations, the Italian SQA-MA (D.Lgs. 172/2015, Table 3/B), whereas Ni exceeded the HCMR ERL threshold throughout the study area. Cr-Tot exceeded the Italian SQA-MA (D.Lgs. 172/2015, Table 3/B) at a limited number of stations. All remaining investigated metals and metalloids showed concentrations always below the applicable regulatory reference values.

#### 8.4.2.5 Total Petroleum Hydrocarbons (TPH) and Polycyclic Aromatic Hydrocarbons (PAHs)

Hydrocarbon concentrations in surface sediments were generally low throughout the study area. The light hydrocarbon fraction ( $C \leq 12$ ) remained below the analytical LoQ at all stations, whereas the heavier fraction ( $C > 12$ ) and the corresponding TPH were consistently detected at low concentrations, showing limited spatial variability and no evident differences among well-site, Blank and Reference Stations; the only exception was Italy Ref, where both  $C > 12$  hydrocarbons and TPH remained below the LoQ.

Most investigated PAHs were below the analytical LoQ at all stations. Only a limited number of compounds were sporadically detected, mainly Fluoranthene and Pyrene, which represented the most frequently quantified PAHs, occurring at four and five stations, respectively. The highest individual concentrations were recorded for Benzo(b)fluoranthene and Benzo(g,h,i)perylene at Italy Ref, and for Fluoranthene at D6a. Detectable PAHs were confined to a small number of stations, with the highest diversity of quantified compounds and the highest  $\Sigma$  PAHs concentration observed at Italy Ref, followed by the Blank station D6a, where a lower but still comparatively elevated  $\Sigma$  PAHs concentration was recorded. All remaining stations showed either no quantifiable PAHs or only isolated detections, resulting in substantially lower  $\Sigma$  PAHs values and no consistent spatial pattern among well-site, Blank and Reference Stations.

All measured concentrations of petroleum hydrocarbons (including both hydrocarbon fractions and TPH) and PAHs (including  $\Sigma$  PAHs) remained below the applicable reference values adopted in Greece (ERL, HCMR; Long et al., 1995) and the Italian Environmental Quality Standards (SQA-MA; D.Lgs. 172/2015). The results do not indicate hydrocarbon contamination within the investigated sediments.

#### 8.4.2.6 Microplastics in the sediment

Microplastics were not detected in any sediment sample collected at the Asopus-1 station group and Northern station group, the Blank stations, or the Reference Stations. This consistent result across all investigated station groups indicates that no microplastics were detected within the analysed sediment samples and provides no evidence of significant microplastic contamination at the time of sampling. Although no regulatory threshold values are currently available for microplastics in marine sediments under the Greek or Italian frameworks considered in the present study, the absence of detectable particles at all stations provided no indication of significant microplastic accumulation within the investigated seabed.

#### 8.4.3 Geological characteristics in the terrestrial environment

The broader area surrounding the Port of Igoumenitsa is located within the sedimentary domain of the Ionian geotectonic zone, which extends in a predominantly north-south direction along the western margin of mainland Greece. The zone covers much of Epirus, Acarnania, parts of the Ionian Islands, and areas of the northwestern Peloponnese.

According to current geological interpretations, the Adriatic-Ionian (Ionian) Zone is considered an autochthonous unit, overthrust by more internal geotectonic zones forming tectonic nappes. The autochthonous unit is locally exposed through tectonic windows and, in some areas, double tectonic windows. The Ionian Zone represents a continental basin characterized by hemipelagic to pelagic sedimentation.

Within the Region of Epirus, formations of the Ionian Zone constitute the dominant geological units. These formations are unconformably overlain by Neogene deposits, including marls, marly limestones, and conglomerates, as well as Quaternary deposits comprising alluvial sediments, terrace deposits, talus and slope debris, and coastal formations.



#### 8.4.4 Hydrogeology

The onshore facilities of the Port of Igoumenitsa are located along the coastal margin of the Filiates–Igoumenitsa Groundwater Body (EL050A070), which forms part of the Kalamas River Basin (EL0512) according to the Second Revision of the River Basin Management Plan for the Epirus River Basin District (EL05).

The principal aquifer systems within the Kalamas River Basin are developed in the carbonate formations of the Ionian Zone and discharge through discrete springs. Sinkholes play an important role in the recharge of these karst aquifer systems by draining the closed hydrological basins.

Aquifers of lower significance also occur within the granular formations of the Quaternary deposits. Their groundwater potential depends primarily on the grain-size distribution of the sediments and the prevailing recharge conditions.

Significant areas of recent unconsolidated deposits and Triassic breccias with gypsum are also present, while flysch formations generally constitute formations of lower permeability. Groundwater recharge occurs primarily through the direct infiltration of precipitation into the carbonate formations and, secondarily, through infiltration from streams and rivers. The mean annual recharge is estimated at approximately 171.41 million m<sup>3</sup>/year.

#### 8.4.5 Soil characteristics

According to the Soil Map of Greece available through the Geospatial Information Portal of the Ministry of Environment and Energy, the wider study area surrounding the Port of Igoumenitsa includes several soil-mapping associations. Coastal and low-lying areas are primarily characterised by young alluvial and coastal soils, while the surrounding hilly areas are dominated by shallow, calcareous soils developed over the carbonate formations of the Ionian Zone. Locally, soils associated with colluvial deposits, flysch formations, and other fine-grained geological units are also present.

#### 8.4.6 Tectonic characteristics

The tectonic framework of the Eastern Mediterranean is associated with the convergence between the African (Nubian) and Eurasian tectonic plates. The region is characterized by high tectonic complexity due to the presence of major subduction systems, including the Hellenic subduction zone south of Greece and the Calabrian subduction zone south of Italy. The Apulian Platform and Ionian Sea form part of the broader Ionian–Apulian domain, which undergoes ongoing deformation associated with the relative motion and rotation of the Adria Microplate with respect to the African Plate.

The geological evolution of the wider area reflects a complex geodynamic history from the Permian to the Quaternary. During the Permian to Middle Triassic, extensional processes resulted in the formation of the Ionian sedimentary basin, followed by Tethyan rifting during the Late Triassic to Early Jurassic, which generated regional fault systems and fragmentation of the carbonate platform. Subsequent tectonic reorganization during the Tortonian to Early Messinian resulted in a compressional regime and reactivation

of inherited structures. During the Plio-Quaternary, continued tectonic deformation associated with regional convergence contributed to the present-day structural configuration of the Ionian–Apulian domain.

The Asopus-1 exploration well is located in the southern sector of the Adria Microplate, on the structurally elevated Apulian Platform. The local geological setting is characterized by deep-seated normal faults affecting the carbonate platform, resulting in a horst and graben structural framework and the development of associated sedimentary basins and syn-tectonic mass transport deposits.

Although the wider region is tectonically active, the Asopus-1 well location is situated away from the main active compressional zones associated with the Hellenic and Calabrian subduction systems. Sub-bottom profiler data acquired during the LOT 01 Geophysical Survey Campaign indicate the presence of buried fault structures with offsets of several metres, however, no corresponding fault scarps or measurable fault-related displacements were identified at the seabed within a 500 m radius of the well location. The local seabed morphology therefore does not show evidence of recent tectonic deformation mapped at the survey scale.

Regarding the onshore component of the Project, the wider Igoumenitsa area is classified within Seismic Zone II according to the Amendment of the Provisions of the Greek Anti-Seismic Regulation EAK 2000 due to the Revision of the Seismic Hazard Map (Government Gazette 1154/B/12.08.2003). For this seismic zone, the design ground acceleration coefficient is defined as  $\alpha = 0.24$ , where the maximum horizontal ground acceleration is expressed as  $A = \alpha \times g$ , with  $g$  representing gravitational acceleration.

#### 8.4.7 Geo-hazards

Predictive landslide susceptibility mapping available through the European Marine Observation and Data Network (EMODnet) indicates that the Project area is characterized by low susceptibility to gravity-driven mass movements, associated with the generally gentle bathymetric gradients of the distal Apulian Platform (Innocenti et al., 2020). Based on regional seismotectonic information, the potential for tsunami generation directly at the well location is considered low, given the distance from the main active subduction zones of the Hellenic Arc and the absence of steep local bathymetric gradients typically associated with major submarine slope failures. Volcanic activity in the Mediterranean is primarily associated with the Tyrrhenian and Aegean regions, while deep-sea mud volcanoes are mainly distributed along the Mediterranean Ridge and Calabrian Arc. No volcanic features have been identified within the vicinity of the Asopus-1 well location.

Regarding fluid-escape features, regional predictive models (Spatola et al., 2025) indicate that the wider Project area falls within a zone of variable pockmark susceptibility, related to the presence of fault systems that may provide pathways for fluid migration. However, available desktop information and geophysical data do not indicate mapped pockmarks or active gas seepage at the well location. Review of existing offshore infrastructure indicates that no oil and gas or renewable energy installations are present within a 100 km radius of the well location. International submarine telecommunication cables are present within the wider region, including the planned Eagle system and the operational Jonah and AAE-1 systems. Bathymetric and acoustic data acquired during the LOT 01 Geophysical Survey Campaign identified the closest cable, AAE-1, at a minimum distance of approximately 2,692 m from the well location.

Sub-bottom profiler data acquired during LOT 01 indicate that the shallow subsurface within a 500 m radius of the Asopus-1 well trajectory is primarily characterized by chaotic seismic facies associated with a mass transport deposit, classified as seismic facies F2. At the well location, this unit has an estimated thickness

of 18.62 m and is underlain by a medium-reflectivity horizon (R3) identified at approximately 19.72 m below seabed. Although a pelagic sediment cover is present regionally, within the immediate well area the fine-grained sediment cover within seabed grooves is too thin to be distinguished as separate seismic facies.

Localized acoustic blanking features (wipe-out zones) were identified within the 500 m assessment area, beginning at approximately 8 m below seabed. The closest identified anomaly is located approximately 243 m from the well location at a bearing of 214°. These features may be associated with fluid-related processes, including dewatering within the deformed mass transport deposit material, although their precise origin cannot be confirmed from the available data.

Overall, the available surface and sub-surface investigations did not identify evidence of active gas seepage, gas chimneys, active pockmarks, acoustic plumes, mud volcanoes, or gas hydrates within the surveyed Project area. Furthermore, no fault-related seabed displacement or fault scarp morphology was identified within the 500 m area surrounding the well trajectory.

## 8.5 Natural environment

### 8.5.1 General characteristics

#### 8.5.1.1 Benthic habitats

Available literature indicates that the deep-sea benthic environment of the Eastern Ionian Sea is predominantly characterised by soft-sediment habitats composed of fine-grained muddy and silty-clay sediments. These deep-water environments support benthic communities adapted to oligotrophic conditions, relatively stable deep-water temperatures, and elevated salinity. Certain bathyal habitats within the Eastern Ionian Sea support Vulnerable Marine Ecosystems, associated with fragile, slow-growing, habitat-forming sessile species. Documented deep-water coral assemblages include bamboo corals, such as *Isidella elongata*, and black corals, including *Leiopathes glaberrima* and *Antipathes dichotoma*, which are typically associated with deep-sea soft sediments at depths of approximately 300–1,000 m. While cold-water coral habitats are known from other areas of the Mediterranean, no evidence of living cold-water coral reef structures has been reported from the Eastern Ionian Sea.

Consistent with the conditions described for the Eastern Ionian Sea, AUV observations and macrozoobenthic analyses indicate that the seabed within the study area is largely homogeneous and dominated by the Mediterranean Upper Bathyal Mud biocoenosis (EUNIS code: ME65). This habitat is characterised by fine-grained sediments supporting benthic communities adapted to deep-water conditions. Observations included evidence of burrowing and tubicolous organisms, occasional deep-sea fish species belonging to the family Macrouridae, and local areas associated with the burrowing sea anemone *Andresia partenopea*.

A limited rocky substrate area corresponding to the Mediterranean Upper Bathyal Rock biocoenosis (EUNIS code: ME15) was identified at station D4a. This hard-substrate habitat supported deep-water coral assemblages associated with *Antipathella subpinnata* and/or *Callogorgia verticillata*, representing a localised increase in habitat diversity within the predominantly soft-sediment bathyal environment.

### 8.5.1.2 Macrozoobenthos community

Based on regional literature, the deep-sea benthic environment of the Eastern Ionian Sea supports biological assemblages specifically adapted to oligotrophic conditions, deep-water homothermy, and high salinity. The structure of these communities in Mediterranean bathyal environments is strongly controlled by the reduced downward flux of particulate organic carbon (POC) to the seafloor. Under such conditions, macrobenthic biomass and diversity are naturally low, and communities are typically dominated by opportunistic and tolerant taxa, particularly annelids and nematodes, which are better adapted to limited trophic availability. Furthermore, the fine granulometry of these bathyal sediments reduces interstitial circulation and promotes low redox potential conditions, which naturally limits the occurrence of more sensitive taxa, such as many molluscs and peracarid crustaceans.

Consistent with this regional desktop baseline, analyses of macrobenthic communities revealed an overall homogeneous ecological structure across the Asopus-1 station group and Northern station group, Blank stations, and Reference Stations, with no statistically significant differences among station groups. The observed variability was primarily attributable to natural small-scale heterogeneity of the sedimentary environment

Benthic communities were characterized by low abundance, reduced species richness, and limited diversity, confirming the conditions typically observed in oligotrophic Mediterranean bathyal environments. The ecosystem was dominated by the Mediterranean Upper Bathyal Mud biocenosis (EUNIS code: ME65). A total of 116 individuals belonging to 19 taxa were recorded, with Annelida overwhelmingly dominating both abundance (94.8 %) and species richness (73.7 %). Community structure was largely dominated by the sipuncula *Golfingia* sp., a taxon commonly associated with fine-grained bathyal sediments.

Ecological-quality indices reflected the naturally low-diversity character of these deep-sea communities. M-AMBI values ranged from “Bad” to “Moderate”, whereas AMBI classified most stations as “Undisturbed”, with only isolated cases of “Slightly” or “Moderately disturbed” conditions. Overall, the results were consistent with a naturally oligotrophic bathyal ecosystem rather than with evidence of ecological disturbance.

### 8.5.1.3 Plankton

Regional literature characterizes the Ionian Sea as a highly oligotrophic basin, where nutrient depletion in surface waters limits primary production and supports plankton communities typical of offshore marine environments. Phytoplankton assemblages are generally dominated by small-sized microalgae (<10 µm), although occasional occurrences of Indo-Pacific diatoms (e.g., *Chaetoceros bacteriaströides*) and rare dinoflagellates (e.g., *Gynogonadinium aequatoriale*) have been reported. Historical studies also indicate that episodic blooms of siliceous phytoplankton contribute to intermittent vertical fluxes of particulate organic matter. Similarly, mesozooplankton communities are characterized by relatively low biomass but high taxonomic diversity, with holoplanktonic taxa, particularly copepods, dominating offshore waters under the influence of the basin's oligotrophic conditions and hydrological stratification. Ichthyoplankton assemblages are likewise representative of deep offshore environments and are typically dominated by mesopelagic and bathypelagic species associated with deep scattering layer communities rather than coastal fish assemblages.

The survey results of LOT 02 were consistent with this regional baseline. The phytoplankton community exhibited significant differences among the three sampling depths (surface, middle and bottom), indicating that light availability is an important factor controlling its vertical distribution. Significant spatial variability was also observed among the Asopus-1, northern, Blank and Reference station groups, reflecting natural environmental variability. The community was dominated by the "Other taxa" category, comprising primarily Cryptophyceae and unidentified microflagellates (<10 µm), while Bacillariophyceae (diatoms) represented the second most abundant group, mainly due to the widespread occurrence of the *Pseudo-nitzschia delicatissima* complex together with species such as *Thalassionema nitzschioides*. Numerous dead cells of *P. delicatissima* were recorded, suggesting the recent decline of a bloom event. Dinophyceae and Coccolithophyceae, including *Gephyrocapsa huxleyi*, were less abundant and less diverse, consistent with offshore oligotrophic conditions.

The mesozooplankton community displayed high taxonomic diversity and a homogeneous spatial distribution across all sampling stations, with no significant differences between the Asopus-1, northern and Reference station groups. Community composition was dominated by copepods, including abundant calanoid species such as *Clausocalanus paululus* and *Haloptilus longicornis*, together with less common deep-water taxa including *Arietellus pavoninus* and *Augaptilus glacialis*. Other characteristic holoplanktonic organisms included pteropods (*Cavolina* sp.), pelagic polychaetes (*Tomopteris* sp.), euphausiids and bathypelagic amphipods (*Anchylomera blossevillei*). In contrast, meroplankton was only sparsely represented by larval forms such as Brachiolaria and Auricularia, indicating a negligible influence from coastal environments.

The ichthyoplankton assemblage was similarly representative of deep pelagic offshore ecosystems. The community was dominated by mesopelagic and bathypelagic species typical of oligotrophic waters, including *Cyclothone braueri*, *Maurolicus muelleri*, myctophids such as *Hygophum benoiti* and *Lampanyctus pusillus*, and paralepidids including *Arctozenus risso* and *Paralepis coregonoides*. Coastal taxa were scarce, with the epipelagic component represented primarily by larvae of the European sardine (*Sardina pilchardus*) and unidentified Scombridae. Overall, the plankton communities recorded during the survey were consistent with the natural ecological characteristics of the deep offshore Ionian Sea and showed no evidence of unusual community structure or anthropogenic influence.

#### 8.5.1.4 Fish fauna

Based on global geographic range data from the IUCN database, 371 marine fish species are identified within the wider project area, comprising 310 ray-finned fishes, 60 cartilaginous fishes, and 1 lamprey species. Field analyses of ichthyoplankton from the immediate area recorded low species diversity and abundance, consistent with the characteristics of an open-ocean, deep pelagic environment with limited influence from neritic inputs. The larval assemblage was dominated by the epipelagic species *Sardina pilchardus* and larvae of the family Scombridae. The remaining diversity was primarily represented by mesopelagic taxa, including *Cyclothone braueri*, *Maurolicus muelleri*, and representatives of the family Myctophidae, such as *Hygophum benoiti* and *Lampanyctus pusillus*. Species associated with meso- to bathypelagic environments, including the paralepidids *Arctozenus risso* and *Paralepis coregonoides*, were also recorded, reflecting their broad vertical distribution across intermediate and deeper water layers.

Near the seabed, AUV visual surveys confirmed the presence of deep-sea fishes belonging to the family Macrouridae associated with the muddy bathyal seafloor. The deep waters of the study area support

characteristic bathyal fish assemblages, including cartilaginous species such as the blackmouth catshark (*Galeus melastomus*), longnose skate (*Dipturus oxyrinchus*), and longnose spurdog (*Squalus blainville*). Additional obligate deep-water species, including the rabbitfish chimaera (*Chimaera monstrosa*), velvet belly lanternshark (*Etmopterus spinax*), and kitefin shark (*Dalatias licha*), are documented from depths exceeding 200 m.

Environmental DNA (eDNA) metabarcoding analyses conducted across the study area further were confirmed with the presence of both demersal and pelagic fish assemblages characteristic of the northern Ionian Sea. Despite the rapid dilution of genetic material expected in open pelagic environments, the survey detected several commercially and ecologically important species, including European hake (*Merluccius merluccius*), European anchovy (*Engraulis encrasicolus*), and black-bellied angler (*Lophius budegassa*). The common sole (*Solea solea*) was detected across all study-area categories and exhibited the highest number of sequence reads among the identified vertebrate taxa. The detection of lanternfishes (*Hygophum* sp.) further supports the presence of deep-sea mesopelagic and bathypelagic communities expected within the bathyal waters of the wider area.

#### 8.5.1.5 Marine mammals

Available literature and existing datasets indicate that the wider Ionian Sea and the Hellenic Trench margin support a diverse assemblage of marine mammals (Notarbartolo di Sciara, 2016), although species occurrence and density vary spatially and temporally across the region. Documented species include deep-diving cetaceans such as the sperm whale (*Physeter macrocephalus*), classified as Endangered (EN) at the Mediterranean regional level, and Cuvier's beaked whale (*Ziphius cavirostris*), classified as Vulnerable (VU) (Notarbartolo di Sciara et al., 2012; Holcer et al., 2007; Thompson et al., 2023; IUCN, 2023). The area also supports the fin whale (*Balaenoptera physalus*), the only resident baleen whale in the Mediterranean Sea, which is classified as Endangered (EN). Furthermore, several delphinid species occur in the area, including the striped dolphin (*Stenella coeruleoalba*), classified as Least Concern (LC); Risso's dolphin (*Grampus griseus*), classified as Endangered (EN); the short-beaked common dolphin (*Delphinus delphis*), classified as Endangered (EN); the common bottlenose dolphin (*Tursiops truncatus*), classified as Vulnerable (VU); and the rough-toothed dolphin (*Steno bredanensis*), classified as Near Threatened (NT) (Bearzi et al., 2011; Carlucci et al., 2017; IUCN, 2023). Records of the Mediterranean monk seal (*Monachus monachus*), classified as Endangered (EN), are also available from the wider area (Notarbartolo di Sciara et al., 2009; IUCN, 2023). These species are subject to strict protection under Annex IV of the EU Habitats Directive (Council Directive 92/43/EEC). In addition, the Mediterranean monk seal (*Monachus monachus*) is listed under Annex II of the Directive, requiring the designation of Special Areas of Conservation. Cetacean species are also covered by relevant international conservation agreements, including ACCOBAMS, the Bern Convention, CITES, and the Convention on Migratory Species (CMS), while the Mediterranean monk seal is protected under relevant international conservation frameworks, including the Bern Convention, CITES, and CMS.

Dedicated marine fauna observations were undertaken during both the LOT 01 and LOT 02 campaigns to characterise marine mammal presence. The observations also supported the implementation of survey mitigation measures in accordance with ACCOBAMS guidance.



During LOT 01, a total of 373 hours and 14 minutes of monitoring effort was completed, comprising 223 hours and 58 minutes of daylight visual observations and 149 hours and 16 minutes of nighttime Passive Acoustic Monitoring using a towed hydrophone array and PAMGuard software. Visual observations identified striped dolphins and unidentified delphinids in the vicinity of the survey vessel. In parallel, analysis of autonomous hydrophone recordings from the offshore mooring system identified sperm whale vocalisations on most monitoring days and at least 13 acoustic encounters attributed to Cuvier's beaked whales during the analysed dataset.

During LOT 02, visual observations were conducted during daylight hours, with Passive Acoustic Monitoring undertaken during nighttime periods and reduced visibility conditions. Marine mammal observations included a single adult Risso's dolphin recorded on 27 March in approximately 800 m water depth and a solitary adult sperm whale observed on 28 March in approximately 850 m water depth. The sperm whale was subsequently acoustically tracked during a dive reaching approximately 750 m depth. Additional acoustic detections included two nocturnal dolphin encounters on 15 March, characterised by clicks and burst pulses in the 30–48 kHz frequency range, and a potential sperm whale detection on 31 March.

#### 8.5.1.6 Sea turtles

Desktop studies indicate that the broader Ionian Sea serves as an important migratory, developmental, and year-round foraging area for sea turtles across various life stages (Casale et al., 2018; Papazekou et al., 2024). The region supports nesting and foraging populations of the loggerhead turtle (*Caretta caretta*), which is classified as Vulnerable (VU) globally and Least Concern (LC) at the Mediterranean regional level, and the green turtle (*Chelonia mydas*), classified as Least Concern (LC) globally and Near Threatened (NT) at the Mediterranean regional level (IUCN, 2023; Hochscheid et al., 2019). Additionally, the leatherback turtle (*Dermochelys coriacea*), classified as Vulnerable (VU) globally, is regularly recorded as a non-breeding visitor to the Mediterranean basin. While adult turtles of these species exhibit a strong preference for neritic habitats (generally defined as waters over the continental shelf, typically extending to the 200 m isobath) for foraging and wintering, satellite telemetry indicates that the deep pelagic waters of the Ionian Sea function as important migratory corridors (Casale et al., 2018). Tracking data indicates that that post-nesting loggerhead turtles transit through the Ionian Sea, including the Strait of Otranto when moving between Mediterranean habitats and northern Adriatic foraging grounds. Due to the spatial overlap between these migratory corridors and regional fishing effort, sea turtles are highly vulnerable to anthropogenic mortality, primarily through incidental fisheries bycatch, entanglement, and marine litter ingestion, as reflected by high stranding rates along the Ionian coasts of Greece and Italy (Despoti et al., 2025; Papazekou et al., 2024). These species are subject to strict protection under Annex IV of the EU Habitats Directive and are also protected under CITES, the Convention on Migratory Species (CMS), and Annex II of the SPA/BD Protocol.

Field observation efforts conducted across the LOT 01 and LOT 02 campaigns confirmed the presence of sea turtles utilizing the deep-water offshore project area. During the LOT 01 visual daylight observations, two specific encounters were documented: on April 8, an unidentified sea turtle (likely a loggerhead) was observed swimming slowly near the vessel before diving, and on April 12, an adult male loggerhead sea turtle (identified by its extended tail) was recorded swimming parallel to the vessel at a range of 25 m (Lighthouse SpA, 2026). During the subsequent LOT 02, an additional visual sighting of a single large adult loggerhead sea turtle occurred in 700 meters of water on March 30.

### 8.5.1.7 Avifauna

Desktop data and results of field surveys indicate that the wider Ionian Sea forms part of the Black Sea-Mediterranean Migratory Bird Flyway. The offshore pelagic waters are utilised by pelagic seabird species such as Scopoli's Shearwater (*Calonectris diomedea*), Yelkouan Shearwater (*Puffinus yelkouan*), and European Storm-petrel (*Hydrobates pelagicus*), as well as by more coastal species including Audouin's Gull (*Larus audouinii*) and Mediterranean Gull (*Larus melanocephalus*), for foraging, post-breeding dispersal, return movements to breeding sites, and migratory transit. Telemetry data show that Scopoli's Shearwaters breeding on nearby islands traverse the Project area during foraging trips. However, the primary migratory corridors for soaring birds, waterbirds, and passerines are concentrated along the coastal areas and island chains rather than the open sea. It should be noted that the available bibliographic and field survey data for the survey area are very limited and do not allow firm conclusions to be drawn regarding the autumn migration and wintering periods.

The project area does not overlap with any Special Protection Area (SPA), Important Bird Areas (IBAs) or breeding colonies; the nearest designated SPAs and IBAs, such as the Diapontia Islands, are located approximately 50 km to the east. This however should be considered with caution, as both Greece and Italy are currently in a process filling the knowledge gaps regarding the birds, marine mammals and sea turtles in the offshore marine environment and identifying marine hotspots to be proposed for inclusion in the Natura 2000 network of protected areas (LIFE MareNatura).

Avifauna visual observations were carried out during daylight hours over a 10-day period, spanning from March 14 to March 16, 2026, and from March 26 to April 1, 2026. The total duration of the visual observations was 115 hours. The survey vessel travelled a total distance of 1,198.9 kilometers, out of which the visual observations were conducted along transects with a total length of 330.5 kilometers. A total of 43 bird species or species groups were visually recorded across the surveyed areas. Scopoli's Shearwater was the most abundant seabird species, with 53 individuals recorded in the immediate survey area and 27 in the wider Block 2 area. Recorded Scopoli's Shearwaters were primarily travelling towards the Ionian coast of Italy, where species important foraging areas are located, therefore it is considered that the main species behaviour in the immediate survey area and in the Block 2 area is traversing the areas towards/from their foraging areas. The second most abundant species in the immediate survey area (48 individuals recorded) and the Block 2 area was the Mediterranean Gull, which is considered to be using the area for migration/passage towards its breeding areas. Yelkouan shearwaters were not recorded in the immediate survey area or Block 2, with sightings restricted mainly to the coastal areas outside Block 2. Audouin's Gulls were recorded in the pelagic areas, including six individuals in the immediate survey area and two in Block 2, primarily consisting of immature individuals in pre-breeding passage. Additional species observed in the immediate survey area and Block 2 on spring migration included waterbirds such as the Garganey, herons such as the Great Egret and Grey Heron, waders such as the Eurasian Curlew, and raptors including the Western Marsh Harrier, Lesser Kestrel, and Common Kestrel. The presence of these species in the pelagic areas indicates use of the area during spring migration. Furthermore, 14 migratory passerine species were recorded in the immediate survey area and Block 2 during the survey period. Under the weather conditions during the field surveys the majority of observed passerines utilized the survey vessel as a temporary stopover for resting.

## 8.5.2 Areas of the National System of Protected Areas

### 8.5.2.1 Natura 2000 Network

The closest Natura 2000 sites to the Asopus 1 exploration well site are the Marine area of the Diapontia islands Special Area of Conservation (SAC) (GR2230010) and the Diapontia Islands: Othoni, Ereikousa, Mathraki and rocky islets Special Protection Area (SPA) (GR2230008), both located approximately 41 km northeast from the Project. The SAC encompasses shallow waters characterised by *Posidonia oceanica* beds, reefs, and sea caves. The SPA supports breeding seabirds and migratory bird populations, specifically recording species such as the peregrine falcon (*Falco peregrinus*), corncrake (*Crex crex*), European turtle dove (*Streptopelia turtur*), purple heron (*Ardea purpurea*), common buzzard (*Buteo buteo*), Scopoli's shearwater (*Calonectris diomedea*), Yelkouan shearwater (*Puffinus yelkouan*), European storm-petrel (*Hydrobates pelagicus*), and Audouin's gull (*Larus audouinii*).

The Costa Otranto - Santa Maria di Leuca SAC (IT9150002) is located approximately 53 km northwest of the exploration well in Italy. The site contains *Posidonia oceanica* beds, reefs, vegetated sea cliffs, and Mediterranean temporary ponds. Protected fauna within this site includes the Mediterranean monk seal (*Monachus monachus*), Apennine yellow-bellied toad (*Bombina pachypus*), blue rock thrush (*Monticola solitarius*), long-fingered bat (*Myotis capaccinii*), and little bustard (*Tetrax tetrax*).

The Ugento Coast SAC (IT9150009) is located in Italy at a distance of approximately 66 km northwest from the exploration well. The species designated for this site include the Apennine yellow-bellied toad (*Bombina pachypus*), four-lined snake (*Elaphe quatuorlineata*), and European ratsnake (*Zamenis situla*).

The Gallipoli Coast and St. Andrea Island SPA/SAC (IT9150015) is located approximately 80 km northwest from the well. The area includes *Posidonia oceanica* beds, coastal lagoons, reefs, and vegetated sea cliffs. Documented species within this location include the common bottlenose dolphin (*Tursiops truncatus*), loggerhead turtle (*Caretta caretta*), greater horseshoe bat (*Rhinolophus ferrumequinum*), Apennine yellow-bellied toad (*Bombina pachypus*), four-lined snake (*Elaphe quatuorlineata*), Audouin's gull (*Larus audouinii*), common kingfisher (*Alcedo atthis*), and numerous wetland birds.

### 8.5.2.2 Ionian Marine National Park

The Ionian Marine National Park provides a unified spatial management framework for the marine environment of western Greece. Its scientific and regulatory basis was established through a Special Environmental Study, approved by the Hellenic Ministry of Environment and Energy on 29 December 2025. The park covers a marine area of approximately 17,691 km<sup>2</sup> and associated terrestrial areas of approximately 21 km<sup>2</sup>. It extends from the waters north of Lefkada to the island of Antikythera, including the 12-nautical-mile territorial waters from the northern Ionian Sea to Cape Tainaro and the 6-nautical-mile zone east of Cape Tainaro. The park incorporates 24 existing Natura 2000 sites, including 16 sites with marine components, aiming to enhance ecological connectivity among existing protected areas.

The zoning framework of the park was developed based on available scientific information on marine habitats and species, while considering existing maritime activities and uses. The protected area includes

important marine habitats, including *Posidonia oceanica* meadows, marine caves, and deep-sea habitats associated with biogenic structures and coralligenous communities.

The park includes extensive areas of the Hellenic Trench and supports habitats used by marine fauna for feeding, reproduction, and migration. Protected marine mammal species occurring within the wider area include the Mediterranean monk seal (*Monachus monachus*), sperm whale (*Physeter macrocephalus*), and Cuvier's beaked whale (*Ziphius cavirostris*). The area also supports delphinid species, including common dolphin and bottlenose dolphin, and includes important habitats for the loggerhead sea turtle (*Caretta caretta*).

The Ionian Marine National Park is located approximately 150 km northeast of the Asopus-1 exploration well.

### 8.5.2.3 National parks

The proposed shorebase facilities at the Port of Igoumenitsa are located outside the boundaries of designated National Parks. The nearest National Parks are the Amvrakikos National Park, located approximately 45 km southeast of the port, and the Pindus National Park, located approximately 55 km northeast.

### 8.5.2.4 Wildlife refuges

The area surrounding the proposed shorebase facilities at the Port of Igoumenitsa does not include any designated Wildlife Refuges (Καταφύγια Άγριας Ζωής). The nearest designated site is the K237 "Varathi (Mavroudi–Nea Selekeia–Igoumenitsa)" Wildlife Refuge, located approximately 2 km north of the port, followed by the K906 Wildlife Refuge, located approximately 4 km northwest.

### 8.5.2.5 Aesthetic forests

No aesthetic forests are identified within the wider study area surrounding the Project's shorebase facilities at the Port of Igoumenitsa.

## 8.5.3 Forests and woodlands

The shorebase facilities of the Project do not fall within the boundaries of the ratified and published forest map of Igoumenitsa (Initial Ratified Forest Map under Article 17 of Law 3889/2010, as amended and in force, approved by Government Gazette 531/D/24 December 2018). The ratified forest maps for the wider study area surrounding the shorebase facilities have not yet been published, however, available information is provided through the official website of the Hellenic Cadastre. According to these maps, areas located to the northwest, south, and east of the shorebase facilities are classified as forests and forest lands.

## 8.5.4 Other significant natural areas

### 8.5.4.1 Ecologically or Biologically Significant Marine Areas (EBSAs)

The closest EBSA to the Project area is the South Adriatic Ionian Strait EBSA, within which the Asopus-1 exploration well is located. The EBSA encompasses the transition zone between the southern Adriatic Sea and the northern Ionian Sea, including the Otranto Channel, with water depths ranging approximately from 200 m to 1,500 m. The designation recognizes the ecological importance of the area as habitat for Cuvier's beaked whale (*Ziphius cavirostris*), giant devil ray (*Mobula mobular*), striped dolphin (*Stenella coeruleoalba*), Mediterranean monk seal (*Monachus monachus*), and loggerhead sea turtle (*Caretta caretta*). The area also supports highly migratory species, including tuna (*Thunnus thynnus*) and swordfish (*Xiphias gladius*), as well as pelagic sharks and deep-sea benthic communities, including cold-water corals and sponge aggregations.

The Hellenic Trench EBSA is located further south of the Project area, approximately 187 km from the Asopus-1 exploration well. It extends along the Hellenic Arc and Trench system and is recognized as an important habitat for deep-diving cetaceans, particularly the sperm whale (*Physeter macrocephalus*) and Cuvier's beaked whale (*Ziphius cavirostris*), as well as other marine mammals including the Mediterranean monk seal (*Monachus monachus*), short-beaked common dolphin (*Delphinus delphis*), and common bottlenose dolphin (*Tursiops truncatus*).

### 8.5.4.2 Important Marine Mammal Areas (IMMAs)

The closest designated Important Marine Mammal Area (IMMA) to the project area is the Ionian Archipelago IMMA, located approximately 37 km east of the Asopus-1 exploration well. It is formally designated based on the presence and ecological requirements of the common dolphin (*Delphinus delphis*) and the Mediterranean monk seal (*Monachus monachus*). Furthermore, the area supports an assembly of other documented marine mammal species, including the fin whale (*Balaenoptera physalus*), the common bottlenose dolphin (*Tursiops truncatus*), and Cuvier's beaked whale (*Ziphius cavirostris*). The IMMA boundaries are defined by the 200-meter depth contour and encompass the marine environments surrounding the Ionian Islands extending to the mainland Greek coastline.

Additionally, the exploration well is located within the Southern Adriatic and northwestern Ionian Sea. The broader Southern Adriatic and Northern Ionian Sea region is identified in the IMMA e-Atlas as an Area of Interest (AoI), indicating a region under evaluation for possible future IMMA designation.

In the broader regional context, other formally designated IMMAs include the Hellenic Trench, the Gulf of Ambracia, and the Gulf of Corinth. The Hellenic Trench IMMA is located further south, at a distance of approximately 187 km from the exploration well, and serves as a critical habitat for deep-diving cetaceans. Due to historical mass stranding events temporally associated with underwater noise, it has been designated as an Area of Special Concern for Beaked Whales, with recommended precautionary measures for industrial noise-generating activities. The Gulf of Ambracia IMMA is located approximately 168 km to the east of the well, and this semi-enclosed gulf is notable for supporting a highly resident and Critically Endangered subpopulation of common bottlenose dolphins. Finally, the Gulf of Corinth IMMA is located approximately 158 km to the east/southeast of the project area, supporting mixed groups of dolphins in a semi-enclosed pelagic habitat.

#### 8.5.4.3 Cetacean Critical Habitats (CCHs) designated by ACCOBAMS

The closest Cetacean Critical Habitat (CCH) to the project area is the Sazani Island-Karaburun Peninsula, located approximately 72 km north from the exploration well. This site is identified as an area for the common dolphin (*Delphinus delphis*) and other cetaceans. The Eastern Ionian Sea and the Gulf of Corinth CCH is located approximately 158 km east/southeast from the well and is identified as an area for the common dolphin (*Delphinus delphis*) and other cetaceans. The Amvrakikos Gulf CCH is located approximately 168 km east from the well and is designated as an area for the bottlenose dolphin (*Tursiops truncatus*). The Kalamos CCH is located approximately 179 km east/southeast from the well and supports the common dolphin (*Delphinus delphis*) and other cetaceans. The Southwest Crete and the Hellenic Trench CCH is located approximately 187 km south/southeast from the well and is identified as an area for the common dolphin (*Delphinus delphis*) and other cetaceans.

#### 8.5.4.4 Important Sharks and Ray Areas (ISRAs)

The closest Important Shark and Ray Area to the project area is the Santa Maria di Leuca ISRA, located approximately 20 km west/southwest from the exploration well. The area includes complex coral habitat and functions as a reproductive area for the velvet belly lanternshark (*Etmopterus spinax*). The Otranto Channel ISRA is located approximately 50 km north/northwest from the site. The area contains deep muddy substrates dominated by the bivalve *Gryphus vitreus* and bamboo coral (*Isidella elongata*), functioning as a reproductive area for elasmobranch species. The Western Apulian Coast ISRA is located approximately 56 km northwest from the exploration well. This pelagic marine area functions as a feeding ground for the basking shark (*Cetorhinus maximus*). The Amvrakikos Gulf ISRA is located approximately 169 km east/southeast from the well.

#### 8.5.4.5 Key Biodiversity Areas (KBAs)

The closest Key Biodiversity Area to the project area is the Diapontia islands (Othonoi, Ereikousa, Mathraki) and surrounding islets KBA (2943), located approximately 40 km northeast from the exploration well. The area supports breeding seabirds and raptors. The Cape Otranto and Cape Santa Maria di Leuca coast KBA (2844) is located approximately 57 km northwest from the exploration well. It functions as a bottleneck site for migrating raptors, predominantly harriers (*Circus* spp.) and the European honey buzzard (*Pernis apivorus*). The Vlora Bay, Karaburun Peninsula and Cika mountain KBA (2908) is located approximately 80 km north from the well. The site provides habitat for breeding raptors, including the Egyptian vulture (*Neophron percnopterus*), short-toed snake eagle (*Circaetus gallicus*), golden eagle (*Aquila chrysaetos*), and Bonelli's eagle (*Hieraaetus fasciatus*). The Lagoons of Kerkyra island KBA (1169) is located approximately 80 km east from the well. The Lake Butrinti KBA (2910) is located approximately 88 km east from the well. The site contains natural tectonic lakes with reedbeds and supports species of global conservation concern such as the pygmy cormorant (*Phalacrocorax pygmeus*), ferruginous duck (*Aythya nyroca*), and greater spotted eagle (*Aquila clanga*). The Isola di Sant'Andrea KBA (2845) is located approximately 98 km northwest from the well.



#### 8.5.4.6 Important Bird Areas (IBAs)

The Important Bird Areas (IBAs) within a 100 km radius of the project area include coastal, insular, and wetland habitats across Greece, Italy, and Albania. In Greece, the closest IBA to the project area is the Diapontia Islands and surrounding islets IBA, located approximately 42 km to the northeast, which supports breeding pelagic seabirds and raptors. Further east, approximately 78 km from the exploration well, the Lagoons of Kerkyra Island IBA provides wetland habitats supporting cormorants, herons, and ducks. Along the Italian coast to the northwest, the Cape Otranto and Cape Santa Maria di Leuca coast IBA is located approximately 54 km away and functions as a bottleneck site for migrating raptors during spring, predominantly harriers (*Circus* spp.) and the European honey buzzard (*Pernis apivorus*). Further north along the Italian coastline are the Coastline of Gallipoli and Isola S. Andrea IBA (approximately 79 km away) and the Le Cesine IBA (approximately 93 km away), which feature coastal dune systems, brackish ponds, and lagoons that support wintering and migratory waterbird species. Along the Albanian coastline to the north and northeast, the Vlora Bay, Karaburun Peninsula and Cika Mountain IBA is located approximately 79 km away and supports breeding raptors, including the golden eagle (*Aquila chrysaetos*) and the Egyptian vulture (*Neophron percnopterus*). Additionally, the Lake Butrinti IBA, located approximately 88 km away, encompasses coastal tectonic lakes and reedbeds that support species such as the pygmy cormorant (*Phalacrocorax pygmeus*) and ferruginous duck (*Aythya nyroca*).

#### 8.5.4.7 Marine Protected Areas (MPAs)

The Marine Protected Areas (MPAs) within the wider region include designated sites across Greek, Italian, and Albanian waters. Within Greek waters, the closest MPA to the well is the Marine Area of the Diapontia Islands MPA, located approximately 43 km to the northeast, which encompasses shallow waters, reefs, and marine caves. Additional MPAs within the Greek Ionian include the Coastal marine zone from Kanoni to Mesongi (approximately 81 km east), the Paxoi and Antipaxoi Islands and the wider marine area MPA (approximately 93 km southeast), and the Lefkimmi salt pans MPA (approximately 97 km east). In Italian waters to the northwest, the closest site is the Costa Otranto–Santa Maria di Leuca MPA (approximately 53 km away), characterized by vegetated sea cliffs and the presence of the Mediterranean monk seal (*Monachus monachus*). Other MPAs along the Italian coastline include the Posidonieto Capo San Gregorio–Punta Ristola MPA (approximately 57 km away), the Litorale di Ugento MPA (approximately 66 km away), the Alimini MPA (approximately 69 km away), the Litorale di Gallipoli e Isola S. Andrea MPA (approximately 80 km away), the Le Cesine MPA (approximately 93 km away), and the Montagna Spaccata e Rupi di San Mauro MPA (approximately 96 km away). These sites protect coastal lagoons, endemic flora, and habitats for the loggerhead turtle (*Caretta caretta*) and bottlenose dolphin (*Tursiops truncatus*). In Albanian waters to the north, the Karaburun–Sazan Marine National Park is located approximately 79 km away and includes coralligenous communities and marine caves that harbour the short-beaked common dolphin (*Delphinus delphis*) and the date mussel (*Lithophaga lithophaga*). Further east, the Butrint National Park is located approximately 88 km away, encompassing a coastal wetland complex.

#### 8.5.4.8 Fisheries Restricted Areas (FRAs)

The closest Fisheries Restricted Area to the project area is the Deep water fisheries restricted area (1,000 m), with its nearest boundary located approximately 9 km west/southwest from the exploration well. This FRA applies directly to portions of Block 2 where water depths exceed 1,000 meters and prohibits the use of towed dredges and trawl nets to protect deep-sea benthic habitats.

The Lophelia reef off Capo Santa Maria di Leuca FRA is situated approximately 48 km west/northwest from the site. The area protects cold-water coral banks and provides habitat for priority commercial species, including the giant red shrimp (*Aristaeomorpha foliacea*), blue and red shrimp (*Aristeus antennatus*), European hake (*Merluccius merluccius*), Norway lobster (*Nephrops norvegicus*), and blackspot seabream (*Pagellus bogaraveo*).

The Otranto Channel FRA is located approximately 76 km north/northwest away from the exploration well. The area protects Vulnerable Marine Ecosystems including deep-sea sponge communities, white corals, and bamboo coral (*Isidella elongata*), while simultaneously providing habitat for dolphins, sea turtles, sea devils (*Mobula mobular*), and Cuvier's beaked whales (*Ziphius cavirostris*).

#### 8.5.4.9 Specially Protected Areas of Mediterranean Importance (SPAMIs)

The closest Specially Protected Area of Mediterranean Importance (SPAMI) to the project area is the Karaburun Sazan National Marine Park SPAMI (AL1) in Albania, located approximately 79 km north from the project site. The site encompasses marine ecosystems that support the Mediterranean monk seal (*Monachus monachus*), short-beaked common dolphin (*Delphinus delphis*), loggerhead turtle (*Caretta caretta*), date mussel (*Lithophaga lithophaga*), and purple starfish (*Ophidiaster ophidianus*).

Other SPAMIs in the broader Mediterranean basin include the Torre Guaceto Marine protected and natural reserve SPAMI (IT5) and the Porto Cesareo Marine Protected Area SPAMI (IT10) in Italy, both located to the northwest. The Torre Guaceto SPAMI protects habitats of *Posidonia oceanica*, *Cymodocea nodosa*, yellow and white sea fans (*Eunicella cavolini*, *Eunicella singularis*), bryozoans (*Sertella sp.*, *Myriapora truncata*), and red algae (*Laurencia sp.*, *Corallina elongata*). The Porto Cesareo SPAMI protects *Posidonia oceanica* meadows, coralligenous species including *Peyssonnelia*, *Agelas oroides*, *Aplysina cavernicola*, *Oscarella lobularis*, *Chondrosia reniformis*, and *Clathrina spp.*, as well as the Mediterranean monk seal (*Monachus monachus*), amberjacks (*Seriola dumerilii*), dolphinfish (*Coriphenia hippurus*), brown meagre (*Sciaena umbra*), and dusky grouper (*Epinephelus marginatus*).

#### 8.5.4.10 Ramsar sites

The closest Ramsar site to the project area is the Butrint wetland complex, located in Albania approximately 88 km east from the exploration well. The site features coastal lagoons, saltwater and freshwater marshes, reedbeds, forests, and Mediterranean scrub, supporting plant, fish, amphibian, reptile, bird, and mammal species. The Le Cesine coastal wetland Ramsar site is located in the Apulia Region of Italy, approximately 93 km northwest from the exploration well. The site features a coastal dune system and two shallow brackish ponds separated from the sea by a narrow sand barrier, supporting migratory bird populations.

#### 8.5.4.11 Emerald Network of Areas of Special Conservation Interest

The closest Emerald Network area to the project area is the Karaburun–Orikum–Dukat National Park (AL00000014), situated in Albania approximately 80 km north from the exploration well. The site encompasses marine and coastal ecosystems, including the mixed coniferous forests of Llogara, the Orikum Lagoon, and *Posidonia oceanica* marine meadows, which support endemic plant species and marine fauna. The Butrinti National Park Emerald Network area (AL00000004) is located in Albania, approximately 88 km east from the exploration well. The site constitutes a Mediterranean wetland complex comprising a lake, a lagoon, and an area of evergreen woodland. This ecological network area is utilized by wintering and migratory bird populations, including herons, egrets, and the Dalmatian pelican (*Pelecanus crispus*), and provides habitat for the Eurasian otter (*Lutra lutra*).

### 8.6 Anthropogenic environment

#### 8.6.1 Spatial planning – land uses

The overall land use and spatial planning profile of the study area is governed by a regulatory framework operating across national, regional, and local levels. For the Corfu Regional Unit, the General Framework for Spatial Planning and Sustainable Development (GFSPSD), the Regional Spatial Framework (RSF) of the Ionian Islands, and the emerging Local Urban Plans (LUPs) under L. 4759/2020 establish the spatial governance context, emphasising the preservation of the agricultural landscape, the sustainable development of tourism, and the avoidance of land use conflicts along the coastal zone. For the Thesprotia Regional Unit and the Municipality of Igoumenitsa, the RSF Epirus and the approved General Urban Plan (GUP) for Igoumenitsa provide the relevant planning framework, recognising the port of Igoumenitsa as a key development pole of the regional unit and driver of its economic identity.

The settlement and land use baseline reveals several features of relevance to the subsequent impact assessment. The Corfu Regional Unit is a densely settled island system (approximately 158 inhabitants/km<sup>2</sup>, 2021 Census) with a total permanent population of 101,600, concentrated primarily in the city of Corfu and a dispersed network of small rural settlements. The dominant land uses are olive cultivation and tourism-related coastal development, two economic activities that are entirely land-based and physically distant from the offshore drilling location. The Municipality of Igoumenitsa, with a permanent population of 25,698 (2021 Census), is characterised by a concentrated urban and port area surrounded by predominantly forested and rural hinterland. Its economic identity is closely tied to its port function, which constitutes the primary concentration of logistics and transport infrastructure in the Thesprotia Regional Unit and the entry point for the Project's Platform Supply Vessel (PSV) supply operations.

Block 2 contains no permanent settlements or land uses, and human interaction with the area is limited to maritime activities, which are addressed separately. The Project's onshore footprint is similarly limited to an operational area within the existing port zone of Igoumenitsa, entailing no change of land use, no physical displacement, and no modification of existing infrastructure.

Accordingly, the primary transmission pathways for potential social impacts from the Project are not land use change or physical displacement, but rather potential effects on maritime livelihoods, tourism perception and risk, and community-level concerns related to environmental risk. Localised economic activity may be

generated by the port-based logistics component during the drilling campaign will be examined, but it is not expected to alter the settlement structure or land use character of the municipality.

## 8.6.2 Structure and functions of the anthropogenic environment

The proposed Asopus-1 exploration well lies approximately 21.5 km (11.6 nautical miles) offshore Mathraki Island, approximately 3.2 km (1.7 nautical miles) from the Italian EEZ and in water depths of approximately 840 m. There are no islands, coastal features, or fixed subsea installations in the immediate vicinity of the well location.

The nearest onshore administrative unit is the Corfu Regional Unit, one of five regional units comprising the Ionian Islands Region. The Ionian Islands Region recorded a total permanent population of 204,532 in the 2021 Population–Housing Census.

The Corfu Regional Unit encompasses the main island of Corfu as well as the smaller islands of Paxoi, Antipaxoi, and the Diapontian Islands (Othonoi, Ereikoussa, Mathraki). Following the Kallikratis administrative reform (L.3852/2010) and subsequent adjustments under the Kleisthenis I reform (Law 4555/2018), the regional unit is currently subdivided into four municipalities. The Kallikratis reform consolidated the seven pre-existing municipalities into larger administrative entities, aiming to reduce fragmentation and improve public service delivery.

The Municipality of Igoumenitsa constitutes the principal onshore administrative area associated with the Project's maritime logistics activities, as the Port of Igoumenitsa will serve as the operational base for PSV movements supporting the offshore drilling activities. The municipality is located within the Regional Unit of Thesprotia, one of the four regional units comprising the Region of Epirus.

According to the 2021 Population–Housing Census of ELSTAT, the Regional Unit of Thesprotia recorded a permanent population of 40,804 inhabitants, representing approximately 12.8% of the total population of the Region of Epirus (319,991 inhabitants). The Municipality of Igoumenitsa recorded a permanent population of 25,698 inhabitants, corresponding to approximately 63% of the regional unit's population. Compared with the 2011 Census, the municipality experienced a marginal population decline of approximately 0.4%, while the Regional Unit of Thesprotia recorded a decrease of approximately 6.4%, broadly reflecting the wider demographic contraction observed across Epirus and Greece. The municipal unit of Igoumenitsa recorded 18,562 inhabitants at the 2021 Census, of whom 10,315 reside within the urban community boundary, establishing it as the dominant urban centre of Thesprotia but a relatively small city by national standards.

## 8.6.3 Cultural heritage

The northern Ionian Sea and the Strait of Otranto constitute a historically significant maritime corridor that has facilitated navigation, trade, and communication between the Adriatic basin, southern Italy, and the eastern Mediterranean for millennia. Archaeological evidence demonstrates the presence of extensive maritime networks operating since the Bronze Age, which intensified during the Classical, Hellenistic, and Roman periods to support the long-distance transport of amphora-borne commodities like wine and olive oil.

Recent deep-water archaeological surveys, such as those associated with the Greece-Italy POSEIDON pipeline, have fundamentally altered the understanding of regional navigation by discovering ancient shipwrecks (such as Poseidon 1 and 2) at depths exceeding 1,000 meters. These discoveries, alongside an Early Archaic shipwreck carrying Corinthian ceramics found in the Otranto Channel, provide direct evidence that ancient vessels regularly utilized offshore routes crossing the open sea west of Corfu rather than strictly navigating along the coast. Furthermore, these deep-water environments, characterized by fine sediment accumulation and low physical disturbance, provide favorable conditions for the preservation of submerged cultural heritage.

Consistent with the region's archaeological potential, an archaeological target (T057), which is interpreted as an ancient merchant shipwreck carrying transport containers, was identified at a water depth of 880.04 meters, located 8,606 meters north from the proposed well site. . Multibeam bathymetric data characterize T057 as an isolated, elongated mound rising approximately 0.6 meters above the seabed, with dimensions of 23.7 by 8.3 meters. Sub-bottom profiler data indicates the presence of buried material extending 2.20 meters below the seabed, suggesting that a substantial component of the archaeological deposit may remain concealed beneath seabed sediments.

Following the identification of the anomaly, a targeted visual inspection utilizing CathX optical imagery identified a concentration of features consistent with partially buried amphorae within the central portion of the target. The observed amphorae exhibit elongated ovoid bodies, narrow necks, and pointed bases, which are morphologically consistent with transport amphorae. Although the available imagery does not permit secure typological identification, the observable morphology has been interpreted as being broadly consistent with amphora forms associated with the Adriatic production sphere, including Lamboglia 2 and Dressel 6A types, which were widely employed between the late Hellenistic and Early Imperial periods.

The terrestrial cultural heritage baseline demonstrates that the wider study area possesses a rich cultural heritage resource reflecting continuous human occupation from prehistory to the modern era. Corfu and Thesprotia contain numerous designated archaeological sites, historic settlements, fortifications, religious monuments and architectural heritage assets, including the UNESCO World Heritage Site of the Old Town of Corfu.

## 8.7 Socio-Economic environment

### 8.7.1 Demographic data

The demographic profile of the two onshore study areas reveals two territorially and functionally distinct communities. The Corfu Regional Unit is a moderately populated island system whose effective population expands significantly during the summer tourism season, generating an annualised equivalent population increase of at least 20% and substantially higher peak-day pressures during May to October. Its age structure broadly follows the national average, with moderate demographic ageing and a youth share slightly below the national one. The seasonal character of the local economy and the coastal dependence of the dominant tourism sector means that the timing of Project activities during the summer is to be considered.

The Municipality of Igoumenitsa presents a contrasting profile: a port-oriented urban centre of 25,698 permanent residents that has proven demographically resilient relative to its wider regional unit, retaining a

younger and more nationally representative age structure than the predominantly rural and ageing Thesprotia Regional Unit. Seasonal population variation driven by tourism is modest, though transit passenger volumes through the port may generate temporary pressure during the summer season. The concentration of nearly all registered accommodation capacity within the municipality, accounting for 99.4% of the regional unit's hotel overnights, confirms Igoumenitsa's dominance as the sole urban service centre of Thesprotia.

Both study areas sit within regions experiencing long-term demographic contraction, the Ionian Islands Region at a relatively contained rate of 1.6% over the intercensal decade, the Epirus Region at a more pronounced 5.0%, against a national backdrop of sustained population decline, low fertility, and structural ageing.

These trends form the demographic context within which the Project's potential socio-economic impacts, including any temporary employment and supply chain effects at Igoumenitsa, will be assessed.

## 8.7.2 Economic activities and labor market

### 8.7.2.1 Key Economic indicators and production structure

According to the latest Annual Report of the Governor of the Bank of Greece (2025), the Greek economy maintained its positive momentum despite heightened geopolitical uncertainty and a challenging international environment. Real GDP increased by 2.1% in both 2024 and 2025, exceeding the euro area average growth rate. Economic expansion was supported primarily by investment, private consumption and net exports, while employment continued to increase, and unemployment fell to its lowest level in approximately sixteen years. At the same time, the banking sector strengthened further, with non-performing loans declining to their lowest level since Greece joined the euro area, contributing to improved financing conditions and renewed credit expansion.

According to the EC's Spring 2026 Economic Forecast, the Greek economy maintained its growth momentum in 2025, with GDP growing by 2.1% for the third consecutive year, driven by investment, private consumption, and net exports. Growth is projected to moderate to 1.8% in 2026 and 1.6% in 2027, while remaining above the EU average. Investment is expected to stay robust in 2026, supported by a record inflow of EU funds under the RRF, though the RRF wind-down in 2027 is projected to weigh on growth thereafter. On the labour market, the unemployment rate declined to the lowest recorded since 2008 (8.4% in the final quarter of 2025) and is projected to fall further to 7.9% by 2027, though long-term unemployment, at close to 5%, remains the highest in the EU. Greece is expected to maintain fiscal surpluses over the 2025–2027 period, with the public debt-to-GDP ratio projected to decline steadily towards 134% by end-2027. The outlook is subject to downside risks, including a prolonged energy price shock, which is already driving inflation from 2.9% in 2025 to a projected 3.7% in 2026, as well as potential decrease of services exports, particularly tourism, and broader global economic uncertainty.

Exploration Well Asopus 1 is associated with two principal regional economies: the Ionian Islands Region, particularly the Corfu Regional Unit, which lies closest to Block 2, and the Epirus Region, particularly the Thesprotia Regional Unit and the Igoumenitsa Municipality, which is proposed to serve as the logistics and supply base for offshore operations.



The economic characteristics of these areas differ significantly. The economy of the Ionian Islands Region is predominantly service-based and heavily dependent on tourism, which represents the principal contributor to regional GDP and employment. While the primary sector remains constrained by structural challenges such as fragmented landholdings, an ageing workforce and pressures associated with insularity and tourism development, the secondary sector is relatively limited and concentrated mainly in construction and small-scale manufacturing.

The region's strong reliance on tourism has supported economic growth and recovery in recent years but also creates vulnerability to external shocks, as demonstrated during the COVID-19 pandemic. Consequently, economic diversification, innovation and the development of higher-value productive activities remain identified regional development priorities for enhancing the long-term resilience of the regional economy. According to the ROP of Epirus 2021-2027, Epirus faces structural problems of inequalities both in relation to other regions and intra-regionally. Its productive structure includes a strong primary sector with a high share of regional GDP (8.4%), twice the national average and 5.4 times the European average. Epirus has a moderate secondary sector with a GDP (16.8%) close to the national average, while the tertiary sector is the largest in terms of GDP (74.8%) (OECD 2020). Within the Epirus Region, GDP per capita levels vary across regional units. Thesprotia consistently ranks among the highest-performing units in the region, reflecting the strategic role of the Port of Igoumenitsa, which represents a major economic asset within the region, serving as one of Greece's principal passenger and freight gateways to Italy and the wider Adriatic region.

### 8.7.2.2 Employment and unemployment

The labour market baseline indicates that the study area is situated within a national context of continued recovery following the economic crisis and the COVID-19 pandemic. Employment rates have improved and unemployment has declined substantially across Greece, although unemployment remains above the EU average and regional disparities persist.

Within the study area, the Ionian Islands Region is characterised by a high concentration of employment in trade, transport, accommodation and food service activities, reflecting the importance of tourism and related services to the regional economy. In contrast, the Epirus Region exhibits a more diversified employment structure, with significant employment in public administration, education and health, agriculture, and industry alongside service-sector activities.

At sub-regional level, both the Corfu and Thesprotia Regional Units have experienced a long-term shift in employment structure, characterised by declining agricultural employment and increasing employment in service-related sectors. Corfu displays a particularly high concentration of employment in trade, transport, accommodation and food service activities, while Thesprotia retains a more balanced sectoral profile.

From a Project perspective, the principal labour market receptors are the local workforce and businesses operating within the dominant service sectors of the study area. The Port of Igoumenitsa constitutes an important employment and logistics hub within the mainland study area, while tourism-related activities represent a significant component of economic activity in the Ionian Islands. These characteristics provide important context for the assessment of potential employment, supply chain and wider socio-economic effects associated with the Project.

### 8.7.2.3 Income and living conditions

The Ionian Islands Region, whose economy is heavily dependent on international tourism, recorded a GDP decline of approximately 20.7% between 2019 and 2020, substantially exceeding the national average contraction of 9.5%. The Corfu Regional Unit experienced a similar decline (-19.5%). By contrast, the Epirus Region recorded a smaller contraction of approximately 9.4%, broadly in line with the national average, reflecting its more diversified economic base. Thesprotia recorded a decline of approximately 11.8% over the same period.

Following the recovery of tourism and the wider economic rebound, both regions returned to a growth trajectory. By 2023, GDP in the Ionian Islands Region had exceeded its pre-pandemic level by approximately 19.7%, while GDP in Epirus exceeded the 2019 level by approximately 17.9%. Similar recovery trends were observed in the Regional Units of Corfu and Thesprotia. These trends demonstrate the resilience of the regional economies and the importance of tourism, transport and logistics activities in supporting economic growth.

Although the study area encompasses regions that are economically significant at the local and regional level, their contribution to national economic output remains relatively modest. In 2023, the Epirus Region accounted for approximately 2.0% of Greece's GDP, while the Ionian Islands Region contributed approximately 1.7%. At the regional-unit level, Corfu generated approximately 0.8% of national GDP and Thesprotia approximately 0.3%.

GDP per capita in Greece increased from €16,206 in 2015 to €21,301 in 2023. Over the same period, GDP per capita in the Ionian Islands Region increased from €14,878 to €19,502, while GDP per capita in the Corfu Regional Unit increased from €14,588 to €18,572. GDP per capita in the Epirus Region remains below the national average, although it increased steadily over the past decade from €10,950 in 2015 to €13,789 in 2023. The Thesprotia Regional Unit performs somewhat better than the regional average, supported partly by the economic contribution of the Port of Igoumenitsa, with GDP per capita increasing over the same period from €11,636 to €14,233.

Although all territorial units experienced a significant decline during the COVID-19 pandemic in 2020, reflecting the wider economic contraction, GDP per capita recovered significantly thereafter. The recovery was particularly pronounced in the Ionian Islands, reflecting the rebound of international tourism and associated service activities. Nevertheless, GDP per capita in both Corfu and the wider Ionian Islands remains below the national average, which may indicate that the strong tourism economy does not fully translate into productivity levels comparable with those of more economically diversified metropolitan regions.

## 8.8 Technical infrastructures

### 8.8.1 Social infrastructures

Healthcare infrastructure comprises a combination of primary healthcare facilities, regional hospitals and specialised referral centres. While both regions have relatively limited hospital capacity compared with more populous parts of Greece, they are supported by an extensive primary healthcare network and access to

higher-level referral hospitals, including the General Hospital of Corfu and the University Hospital of Ioannina. The Municipality of Igoumenitsa and the Regional Unit of Corfu are also served by local health centres and associated regional clinics providing primary healthcare services.

Social protection services are delivered through regional Social Welfare Centre branches and other public social care units providing residential and community-based services for children, older persons, persons with disabilities and other vulnerable groups. Public social care infrastructure is more extensive in Epirus than in the Ionian Islands, reflecting differences in regional population and service provision.

Educational infrastructure is well established throughout the study area, with comprehensive networks of kindergartens, primary schools and secondary schools across both regions. Higher education is provided by the Ionian University and the University of Ioannina, which together support undergraduate, postgraduate and doctoral education and contribute to the wider educational and research capacity of north-western Greece.

Overall, the social infrastructure baseline indicates that the study area is served by an established network of public health, social protection and educational services operating at national, regional and local levels. The scale and distribution of these services reflect the demographic characteristics and administrative organisation of the Ionian Islands and Epirus.

## 8.8.2 Transport infrastructures

### 8.8.2.1 Road network

In the Corfu Regional Unit, the road network consists of national, provincial, urban and local roads connecting Corfu Town with the main settlements, tourism areas, port facilities and Corfu International Airport. The principal road axes include National Road 24, connecting Corfu with Paleokastritsa, and National Road 25, connecting Corfu with the Achilleion area, supported by the wider island road network. Road traffic is strongly influenced by the concentration of activities around Corfu Town, the airport and the main port, as well as by seasonal tourism-related mobility during the summer period. Coastal and low-lying road sections may be affected by climate-related pressures, including flooding, sea-level rise and coastal erosion.

The Municipality of Igoumenitsa is connected to the regional and national road network of Epirus, with the Egnatia Odos motorway starting from Igoumenitsa and continuing eastwards through Thesprotia, Ioannina and Metsovo towards northern Greece. This connection gives Igoumenitsa a strategic role as the western road gateway of the Egnatia corridor, linking maritime transport from the Adriatic with the mainland road network. The local and regional road network also supports access to the Port of Igoumenitsa, surrounding settlements and coastal connections within Thesprotia. Transport infrastructure in the wider Igoumenitsa area is also relevant in the context of climate adaptation, particularly in coastal and flood-prone areas associated with the lower Kalamas River, the Kalamas Delta and the Igoumenitsa coastal zone.

A key feature of the land transportation network in the onshore facilities study area is the terminus of the Egnatia Motorway at the southern edge of the city of Igoumenitsa, where the new port is located.

This main road corridor connects to the Preveza–Igoumenitsa National Road and the Egnatia Motorway to the south, as well as to the old Igoumenitsa–Ioannina National Road to the north.

### 8.8.2.2 Air connections

The Corfu Regional Unit is served by Corfu International Airport “Ioannis Kapodistrias”, which is one of the main air transport gateways of the Ionian Islands. The airport supports domestic and international air connections and plays a central role in the accessibility of the island, particularly during the tourist season. Its proximity to the urban and coastal zone of Corfu also makes it an important transport asset from both operational and climate-resilience perspectives.

The Municipality of Igoumenitsa does not have an airport within its administrative boundaries. Air access to the wider area is provided indirectly through regional airports, primarily Ioannina Airport, while Corfu International Airport may also provide complementary access when combined with ferry connections between Corfu and Igoumenitsa. As a result, air connectivity for Igoumenitsa is secondary to its road and maritime connectivity, with the municipality’s transport role being primarily linked to the port and the Egnatia Odos corridor.

### 8.8.2.3 Port facilities

The Corfu Regional Unit includes an extensive network of port and coastal facilities serving passenger, tourism, recreational and local maritime functions. On Corfu Island, the main port facilities include the Port of Corfu, the Port of Lefkimmi and the Port of Kassiopi, while smaller facilities support local passenger movements, fishing, recreational boating and access to nearby islands and coastal destinations. The Port of Corfu is the main maritime gateway of the island, serving ferry, cruise and tourism-related traffic, while Lefkimmi provides an important connection between southern Corfu and the mainland through Igoumenitsa.

The Port of Igoumenitsa is the principal port facility of the Municipality of Igoumenitsa and one of the most important ports of western Greece. It is classified as a port of national significance and serves domestic and international passenger, vehicle and freight movements. The port supports ferry connections with Corfu, Lefkimmi, Paxoi and Patras, as well as international Adriatic ferry routes to Italy, including Ancona, Venice, Bari and Brindisi. Its direct connection to the Egnatia Odos enhances its function as a multimodal transport node linking maritime traffic with the national and trans-European road network.

### 8.8.2.4 Maritime traffic

Maritime traffic in Corfu is primarily associated with ferry connections to mainland Greece, local and inter-island passenger services, cruise calls, recreational boating and seasonal tourism-related movements. The Corfu–Igoumenitsa ferry connection is particularly important for the island’s accessibility, supporting the movement of residents, visitors, vehicles and goods between Corfu and the mainland. Maritime activity shows a strong seasonal pattern, with increased passenger and tourism-related traffic during the summer period.

In Igoumenitsa, maritime traffic is a defining component of the municipality’s transport profile. The port handles domestic ferry services to Corfu, Lefkimmi, Paxoi and other Greek destinations, together with international Adriatic routes to Italian ports. These services support passenger mobility, freight transport, Ro-Ro operations and logistics activity, reinforcing the role of Igoumenitsa as a key gateway between Greece, the Ionian Islands and the Adriatic corridor. Due to the port’s location within a coastal and flood-sensitive

area, maritime and associated port infrastructure are relevant to climate resilience, flood risk management and coastal adaptation planning.

## 8.8.3 Technical infrastructures

### 8.8.3.1 Electric Power Transmission Network

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According to Article 2 of Law 4001/2011, the National Electricity Distribution Network (EDDIE) of the Public Power Corporation (PPC S.A.) is located within Greek territory and consists of medium-voltage (MV), low-voltage (LV) lines, electricity distribution facilities, as well as high-voltage (HV) lines and facilities that have been integrated into this network.

The backbone of the Interconnected Transmission System consists of three 400-kV double-circuit lines that transmit electricity primarily from Western Macedonia, which is the most important energy production hub in our country. Approximately 70% of the country's total electricity generation is produced in this region, which is then transmitted to the major consumption centres of Central and Southern Greece, where approximately 65% of the electricity is consumed.

The Interconnected Transmission System also includes 400-kV lines, as well as 150-kV overhead, underground, and submarine cables connecting Andros and the islands of Western Greece—Corfu, Lefkada, Kefalonia, and Zakynthos to the interconnected transmission system, as well as a 66 kV submarine interconnection between Corfu and Igoumenitsa.

The Corfu Regional Unit and the Municipality of Igoumenitsa are both served by the Hellenic Interconnected Electricity Transmission System, operated by the Independent Power Transmission Operator (ADMIE/IPTO), together with the corresponding regional electricity distribution networks.

### 8.8.3.2 Natural Gas Network

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The Greek natural gas market is supplied primarily through Russia, Algeria, and Turkey by companies that hold a Supply License. The National Natural Gas Transmission System transports natural gas from the Greek Bulgarian and Greek Turkish borders to consumers located in mainland Greece.

The National Natural Gas Pipeline System does not pass through either the Region of Epirus or the Region of the Ionian Islands; consequently, no section of the main pipeline or its transmission branches extends into the study area.

### 8.8.3.3 Telecommunications Network

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The Corfu Regional Unit is served by established electronic communications infrastructure, including fixed-line, mobile and broadband networks, as well as terrestrial digital broadcasting services. Telecommunications infrastructure is particularly important in the island context, supporting residential areas, public services, tourism-related activities, transport infrastructure and emergency communications. Regional planning for the Ionian Islands identifies the strengthening of high-technology information and communication infrastructure, the expansion of tele-services and the wider deployment of fibre-optic

networks as priorities for improving connectivity, addressing insularity constraints and enhancing territorial cohesion. Digital terrestrial television coverage is provided through the national Digea network, with coverage and transmitter-centre information available at settlement level.

In the Municipality of Igoumenitsa, telecommunications infrastructure forms part of the wider electronic communications network of the Region of Epirus and serves the urban area, the port zone, public services, businesses and surrounding settlements. The area is served by fixed and mobile telecommunications and internet networks, while regional development planning identifies digital connectivity, broadband infrastructure, fibre-optic networks and 5G deployment as priorities for improving regional accessibility and supporting digital transformation. These networks are considered important supporting infrastructure for the operation of the Port of Igoumenitsa, local economic activity and administrative services, and their continued upgrade is aligned with regional objectives for smart development and improved public and business services.

#### 8.8.3.4 Renewable Energy Sources

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According to the Hellenic Statistical Authority (ELSTAT), total petroleum product consumption in Greece reached 7.03 million metric tonnes in 2024, representing a 2.8% increase compared with 2023. At regional level, Epirus accounted for approximately 4.0% of national petroleum product consumption in 2024, corresponding to an estimated 281,000 metric tonnes. This reflects the region's petroleum demand associated with road transport, heating, commercial activity, port-related operations and other local economic uses.

The Ionian Islands Region accounted for approximately 2.3% of national petroleum product consumption in 2024, corresponding to an estimated 162,000 metric tonnes. Although lower in absolute terms than Epirus, petroleum product demand in the Ionian Islands is influenced by the insular character of the region, tourism activity, maritime transport, local mobility and seasonal fluctuations in energy use. Overall, both regions represent relatively modest shares of national petroleum product consumption, with Epirus recording higher total regional demand than the Ionian Islands.

According to data from the summary fact sheet on Renewable Energy Sources (RES) and High-Efficiency Combined Heat and Power for January 2022, the following table presents the installed capacity of RES and CHP units in the Region of Epirus and in the Ionian Islands Region.

### 8.8.4 Environmental Infrastructures

#### 8.8.4.1 Water supply

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In the Corfu Regional Unit, water supply is provided through local municipal water supply networks and associated infrastructure, including distribution pipelines, pumping stations and storage facilities. Water resource management is linked to the Corfu-Paxoi River Basin, and the reliability of water supply may be influenced by seasonal demand, drought conditions and climate-related pressure on available water resources.



In the Municipality of Igoumenitsa, water supply is provided through the municipal distribution network and associated local water infrastructure. Regional planning for Epirus identifies the modernisation of water supply networks, leakage control and water-saving measures as priorities for improving water resource efficiency and long-term system resilience.

#### 8.8.4.2 Wastewater Management

In the Corfu Regional Unit, wastewater management is supported by existing wastewater treatment infrastructure, including wastewater treatment plants serving Corfu (EL222001012), Benitses (EL222003136), Moraitika (EL222009017) and Lefkimmi (EL222008013). These facilities form part of the wider wastewater management system of the Ionian Islands Region and are considered important environmental infrastructure, particularly in coastal and tourism-intensive areas.

The city of Igoumenitsa is served by a sewerage network. Wastewater is conveyed to the Wastewater Treatment Plant (WWTP) of Igoumenitsa (EL212001012), located at the western end of the Liotrivia peninsula (as shown in the Figure below), where it undergoes secondary treatment. The Wastewater Treatment Plant of Igoumenitsa operates under the approved Environmental Terms (AEPO) of the municipal sewerage and wastewater treatment system, published in the GG in accordance with Law 4014/2011 and is the closest treatment plant to the Port of Igoumenitsa.

#### 8.8.4.3 Solid waste Management

In the Corfu Regional Unit, solid waste management is organised through regional waste infrastructure, including landfill facilities in Central and South Corfu and a recyclable materials sorting facility located within the Corfu landfill area. The regional waste management system also includes transfer and recycling infrastructure, with continued emphasis on improving waste separation, recycling and climate resilience of waste management facilities.

In the Municipality of Igoumenitsa, solid waste management forms part of the Regional Waste Management Plan for Epirus. The regional system includes waste transfer stations, treatment infrastructure for municipal solid waste serving all local authorities of the Region and planned composting infrastructure for biowaste management in the Igoumenitsa and Preveza Regional Units. Green Point infrastructure is also foreseen at municipal level, including in the main urban centres of Epirus.

### 8.9 Anthropogenic pressures on the environment

#### 8.9.1 Pressures in the Epirus Water District (EL05)

In the context of the 2nd Revision of the Epirus River Basin Management Plan (EL05), anthropogenic pressures and their impacts on each surface water body and groundwater body were identified. In accordance with Directive 2000/60/EC, anthropogenic pressures on water bodies are defined as the totality of human activities that affect or may affect water bodies in the area where they are undertaken. The categories of pollution sources are distinguished into point sources, diffuse sources, pressure from the

introduction of priority substances, water abstractions, and other types of anthropogenic pressures or pollution from other sources. Specifically, point sources of pollution include wastewater treatment plants (WWTPs), sewerage network outfalls into natural receiving waters, large hotel units, industrial facilities, livestock farming units, aquaculture and fish-farming facilities, and leakage from uncontrolled waste disposal sites and sanitary landfills. Diffuse sources of pollution encompass agricultural activities, urban wastewater not discharged to a WWTP, pastoral livestock farming, and pollution of water bodies from other sources.

The main anthropogenic pressures in the immediate and wider vicinity of the proposed shore-base facilities are primarily associated with existing port and industrial activities. Several livestock farming units are also present in the wider area, mainly to the east and southeast of the port, which may contribute diffuse loads of nutrients and organic matter through surface runoff. Aquaculture facilities and a wastewater treatment plant are located further west and represent additional pressures mainly on the coastal and marine environment. Overall, the area is already influenced by significant port and transport activity, while pressures associated with livestock farming, industrial operations, aquaculture, and wastewater treatment are more localized or occur within the wider area of influence.

## 8.9.2 Other environmental pressures in the vicinity of the project

### 8.9.2.1 Exploitation of natural resources (Offshore Oil and Gas)

Based on the review of available offshore installation data, no offshore oil and gas installations are located within the immediate area of the Asopus-1 exploration well or within a 100 km buffer. The nearest identified offshore oil and gas installation is AQUILA 2, located approximately 150 km northwest of Asopus-1 in Italian waters, which is reported as closed down. In addition, the Luna A, Luna B, and Hera Lacinia offshore installations are located approximately 150 km southwest of Asopus-1 in Italian waters and are associated with natural gas production.

### 8.9.2.2 Offshore windfarms and renewable energy

No operational offshore renewable-energy installations are present within the immediate area of the Asopus-1 well or within a 100 km buffer. The nearest identified planned offshore wind farm areas are Santa Maria di Leuca, Puglia 1, Puglia 2, and Messapia, located in Italian waters approximately 10 to 15 km from the exploration well. Additional planned offshore wind farms at greater distances include the Diapontia Islands wind farms in Greece, located approximately 40 km east of Asopus-1; the Monopoli wind farm in Italy, located approximately 60 km south; and the Odra Energia wind farm in Italy, located approximately 80 km west.

### 8.9.2.3 Fisheries and aquaculture activity

Commercial fisheries operate within the wider study area, with fishing activities conducted by both Greek and Italian fleets. The Asopus-1 exploration well is located within Geographical Sub-Area (GSA) 19 (Western Ionian Sea), while the wider Block 2 concession area spans both GSA 19 and GSA 20 (Eastern Ionian Sea). The Italian fleet operating in GSA 19 comprises vessels operating from several ports, with small-scale fishing

accounting for more than 70% of the fleet. Aquaculture facilities are confined to designated development areas on the north-eastern coast of Corfu and the Thesprotia coastline. Block 2 and the Exploration Well Asopus-1 location do not overlap with any designated aquaculture development area or existing aquaculture installation, and there is no identified direct spatial overlap with the offshore project area.

#### 8.9.2.4 Shipping and navigation

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At the location of the Asopus-1 exploration well, atmospheric emissions are primarily associated with maritime activities, particularly international shipping and vessel movements. The overall vessel density pattern indicates that the main navigation corridors are concentrated west of Corfu and follow a northwest-southeast alignment through the central Ionian basin. The specific sea area west of Corfu encompassing the Asopus-1 well falls within a zone of relatively low vessel traffic, situated close to regional vessel transit corridors but outside the highest-density shipping routes mapped in the wider area.

#### 8.9.2.5 Military exercise areas

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According to data provided by the Hellenic Navy Hydrographic Service, there are no permanently established military exercise areas, nor are there any temporary restricted or reserved areas currently in force, within the boundaries of Block 2 and the location of the Asopus-1 exploration well.

#### 8.9.2.6 Marine litter

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The analysis of AUV mosaics obtained during the conduction of the LOT01 Geophysical campaign revealed a limited observed presence of marine litter in the investigated areas. In the area of the Asopus-1 well, most of the analysed stations showed no evidence of marine litter, with the exception of a localized presence of a fishing net and textile material at one station. In the vicinity of the Northern station group, three stations showed no presence of marine litter, while the remaining stations exhibited a limited contribution of items, such as a wooden object. Overall, the detected items were discontinuously and locally distributed, with no significant accumulation patterns associated with the Asopus 1 station group and Northern station group compared to the Blank and Reference stations. The observed distribution is consistent with the interpretation that the occurrence of marine litter on the seafloor is primarily controlled by local processes of transport, deposition, and retention of materials, as well as by point-source anthropogenic inputs.

### 8.10 Atmospheric environment – air quality

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At the location of the Asopus-1 exploration well, the offshore environment is not influenced by direct terrestrial emission sources, such as residential areas, agriculture, or industrial activities. Atmospheric emissions within the offshore area are primarily associated with maritime activities, particularly international shipping and vessel movements. These activities generate emissions of sulfur oxides (SO<sub>x</sub>), nitrogen oxides (NO<sub>x</sub>), and particulate matter (PM), which may influence local atmospheric conditions and contribute to secondary aerosol formation. Accordingly, vessel traffic is considered the main anthropogenic source of temporal variability in offshore air quality.

An ambient air quality monitoring station was commissioned in 2026 at Ladochori, near the Port of Igoumenitsa, by the Ministry of Environment and Energy to support continuous monitoring of air quality conditions in the coastal area. As monitoring data from this station were not publicly available at the time of preparation of this report, the baseline characterisation presented below is based on the latest available datasets from the European Environment Agency (EEA).

For the adjacent onshore administrative areas, including the Regional Units of Corfu and Thesprotia, available 2024 spatial air quality data from the EEA indicate that recorded concentrations of monitored pollutants remain below applicable EU limit values. The baseline assessment of the monitored parameters is summarised below:

- Particulate matter (PM10 and PM2.5): Annual mean concentrations of PM10 in the Regional Units of Corfu and Thesprotia are generally below 31  $\mu\text{g}/\text{m}^3$ , remaining below the EU limit value of 40  $\mu\text{g}/\text{m}^3$ . PM2.5 concentrations are predominantly at or below 10  $\mu\text{g}/\text{m}^3$ , below the applicable EU limit value of 25  $\mu\text{g}/\text{m}^3$ .
- Gaseous pollutants ( $\text{NO}_2$ ,  $\text{NO}_x$ ,  $\text{SO}_2$ , CO and NO): Nitrogen dioxide ( $\text{NO}_2$ ) and nitrogen oxides ( $\text{NO}_x$  expressed as  $\text{NO}_2$ ) concentrations are reported at or below 10  $\mu\text{g}/\text{m}^3$ , below the respective EU limit values of 40  $\mu\text{g}/\text{m}^3$  and 30  $\mu\text{g}/\text{m}^3$ . Sulfur dioxide ( $\text{SO}_2$ ) concentrations do not exceed 5  $\mu\text{g}/\text{m}^3$ , below the EU limit value of 20  $\mu\text{g}/\text{m}^3$ . Carbon monoxide (CO) and nitrogen monoxide (NO) concentrations are also reported within the lowest available measurement ranges.
- Heavy metals and hydrocarbons: Concentrations of heavy metals and hydrocarbons associated with particulate matter remain within the lowest reported data categories. Annual mean concentrations of arsenic (As), lead (Pb), and cadmium (Cd) are below their respective EU limit values. Similarly, concentrations of benzo[a]pyrene (BaP) and benzene ( $\text{C}_6\text{H}_6$ ) comply with the applicable EU standards.

## 8.11 Acoustic environment and vibrations

The acoustic environment of the broader Ionian Sea is influenced by a combination of natural biotic and abiotic sources, including marine organisms, wind, and waves, together with significant anthropogenic activities. According to the Marine Strategy Framework Directive (MSFD) assessments for underwater noise (Descriptor 11), the wider region currently lacks established baseline levels and regulatory threshold values for the robust assessment of Good Environmental Status (GES).

Regional soundscape monitoring conducted between 2016 and 2023 across coastal areas extending from the southwestern Peloponnese to Corfu Island indicates that the area is influenced by significant anthropogenic pressures. In the North Ionian Sea, peak sound pressure levels (SPL<sub>peak</sub>) of up to 127.1 dB re 1  $\mu\text{Pa}$  were recorded, with higher levels observed in the more intensively navigated Inner Ionian Sea (129.2 dB re 1  $\mu\text{Pa}$ ). Chronic low-frequency underwater noise within the basin is primarily associated with commercial shipping and fishing vessel activity, while intermittent high-intensity noise events are typically related to military activities, active sonar use, and regional offshore exploration.

To support the oceanographic and acoustic baseline characterisation, an integrated mooring line was deployed offshore midway between Italy and Corfu for a period of 23 days, from 05.04.2026 to 27.04.2026. Data obtained from the deployed single-point current meters indicated stable local current conditions, with speeds generally below 0.10 m/s and a predominant south-southeastward flow direction. The mooring line

was also equipped with an autonomous Passive Acoustic Monitoring (PAM) system to characterise the baseline ambient soundscape and assess the temporal presence of marine mammals.

The PAM system consisted of a CO.L.MAR. GP1190 broadband hydrophone coupled with an RTSYS Sylence-LP autonomous low-power sound recorder. It was configured with a sampling rate of 256 kHz, 24-bit resolution, 15 dB gain, and a 3 Hz high-pass filter. The system operated continuously with a 100% duty cycle, generating 1,467 files of 1,200 seconds each and approximately 2 TB of raw acoustic data. After excluding the deployment and recovery periods to remove operational vessel noise, 20 days of clean baseline acoustic data were available for analysis. The results indicated an average L90 value of  $100.5 \pm 1.2$  dB re 1  $\mu$ Pa within the 63 Hz one-third octave band, which is interpreted as being consistent with a moderately trafficked shipping environment influenced by intermittent noise from commercial vessels, active sonar activities, and distant seismic operations.

Regarding offshore vibrations, naval activities can represent a potential source of underwater vibration, with weapon testing generating energy transmitted through both the water column and seabed. In general, military sonar operations are episodic, being associated mainly with training, experimentation, and system development activities. However, based on information provided by the Hellenic Navy Hydrographic Service, no permanently established military exercise areas and no temporary restricted or reserved areas currently communicated through NAVTEX broadcasts and/or Notices to Mariners are located within Block 2 or in the vicinity of the Asopus-1 Exploration Well.

## 8.12 Electromagnetic fields

Electromagnetic fields occur naturally in the marine environment, with the Earth's magnetic field being the most important natural source. Human activities introduce additional electromagnetic fields through power transmission cables, which can propagate into the marine environment and fall within the sensitivity range of many species. However, the submarine cable routes crossing the central and southern Ionian basin between the Italian and Greek coasts are telecommunication cables. Because these systems transmit data rather than heavy power, the electromagnetic fields produced in the Project area are considered likely to be negligible in comparison with power transmission cables.

The desktop spatial analysis undertaken for the Project indicates that three cable systems are located within the immediate study area and are of direct relevance to the Exploration Well Asopus-1: the planned Eagle system connecting Egypt, Albania, and Italy; the Jonah system (operational since 2012) linking Israel and Italy; and the Asia Africa Europe-1 (AAE-1) system (operational since 2017) connecting Asia, Africa, and Europe. In addition to these, the wider Ionian Sea hosts a broader network of active submarine cable systems of international significance, including the OTEGLOBE Kokkini-Bari cable (operational since 2004 with a length of 700 km), the Italy-Greece 1 (IG-1) cable, the Ionian cable, the Adria-1 cable, and the Thetis cable.

During LOT 01, utilising MBES and HISAS systems, different cables were detected within the study area, mostly exposed on the seafloor. In the south-western sector, a cluster consisting of three cables was recognised and interpreted as belonging to the AAE-1 submarine cable system. Acoustic data identified this AAE-1 cable passing at a minimum distance of 2,692 meters from the Asopus-1 exploration well. In the southernmost portion of the area, a trench excavated for cable installation extended for thousands of meters in length. Moving toward the central sector, the cable trench was no longer visible due to the presence of Mass Transport Deposit harder sediments, suggesting the presence of these hard substrates prevented

trench excavation and the cables were laid directly on the seafloor. Finally, in the northeastern part of the study area, another cable segment was identified at a distance of 6,700 meters from the planned well location. This cable appeared thin, partially buried, and showed a discontinuous path before terminating near an isolated mound.

## 8.13 Water

### 8.13.1 Management plans

#### 8.13.1.1 River Basin Management Plan (RBMP)

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The shorebase facilities of the Project are located within the Water District of Epirus (EL05), for which a River Basin Management Plan (RBMP) has been prepared in accordance with the requirements of the Water Framework Directive (Directive 2000/60/EC), as transposed into national legislation through Law 3199/2003 and Presidential Decree 51/2007.

The 2nd Revision of the RBMP for the Epirus Water District was approved and published under Government Gazette A/71/17.05.2024. According to the RBMP, the nearest surface water bodies to the Port of Igoumenitsa are primarily coastal water bodies associated with the Kalamas River Basin District.

The Port of Igoumenitsa is directly adjacent to the coastal water body “Igoumenitsa Bay” (EL0512C0003H), which is classified as a heavily modified water body due to the presence and operation of port infrastructure. West and northwest of the port area, within the marine area between Igoumenitsa and Corfu, the coastal water body EL0512C0A02N is also identified. Further south of the wider port area, the coastal water body EL0513C0004N is present and forms part of the wider Acheron coastal system. No river or transitional water bodies are located in the immediate vicinity of the shorebase facilities.

Regarding the Asopus-1 exploration well, the offshore location lies west/southwest of the Othonoi Islands and outside the boundaries of the mapped coastal water bodies. The nearest identified surface water body is the coastal water body “Othonoi Island” (EL0534C0012N), which forms part of the Corfu–Paxoi River Basin District (EL0534).

#### 8.13.1.2 Flood Risk Management Plan (FRMP)

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Directive 2007/60/EC (Floods Directive), which entered into force on 26 November 2007, establishes a common European framework for the assessment and management of flood risks. The Directive was transposed into Greek legislation through Joint Ministerial Decision 31822/1542/E103/2010 (Government Gazette B’ 1108/21.07.2010). Its implementation is based on the preparation of Preliminary Flood Risk Assessments, Flood Hazard Maps, Flood Risk Maps, and Flood Risk Management Plans (FRMPs) for each River Basin District, with the latter reviewed every six years in accordance with the requirements of the Directive.

Flood Hazard Maps identify areas potentially affected under different flood probability scenarios (high, medium, and low probability/extreme events), while Flood Risk Maps assess the potential consequences of



flooding on population, economic activities, infrastructure, environmental receptors, cultural heritage, and protected areas. The 1st Revision of the FRMP for the Epirus Water District was approved and published under Government Gazette B' 2775/05.06.2025.

The Asopus-1 exploration well is located outside the Areas of Potential Significant Flood Risk identified in the FRMP. The nearest designated areas are located on the Greek mainland and include the lower Kalamas River floodplain, the Acheron River floodplain, the Louros–Arta plain, and low-lying areas around the Amvrakikos Gulf. These areas are associated with major river systems and coastal plains and are spatially separated from the offshore Project area.

The shorebase facilities at the Port of Igoumenitsa, however, are located within the boundaries of the Area of Potential Significant Flood Risk designated as “Lower Reaches and Delta of the Kalamas River and the Coastal Zone of Igoumenitsa”, identified by the code EL05APSF008.

### 8.13.2 Surface water

The ecological and chemical status assessment presented below is based on the approved 2nd Revision of the River Basin Management Plan (RBMP) for the Epirus River Basin District (EL05). In accordance with Directive 2000/60/EC, the status of surface water bodies is assessed separately through evaluations of ecological status or ecological potential and chemical status, considering biological quality elements, supporting physicochemical parameters, and concentrations of priority substances.

The nearest Water Framework Directive (WFD) surface water bodies to the shorebase facilities at the Port of Igoumenitsa are coastal water bodies. The coastal water body “Igoumenitsa Bay” (EL0512C0003H), which directly encompasses the port area, is classified as having good chemical status, while its ecological potential is classified as lower than good, resulting in an overall status below good. The adjacent coastal water body EL0512C0A02N is also classified as having good chemical status, but moderate ecological status and therefore moderate overall status. Further south, the coastal water body “Epirus coasts in the Ionian Sea” (EL0513C0004N) achieves both good ecological and good chemical status.

Regarding the Asopus-1 exploration well, the nearest WFD coastal water bodies are “Othonoi Island” (EL0534C0012N) and, at greater distance, “Western and Northern Coasts of Corfu” (EL0534C0009N). Both water bodies are classified as having good ecological and good chemical status, resulting in an overall good status.

Greece implements one of the largest bathing water monitoring programmes in Europe, with more than 1,700 designated bathing waters monitored annually under the requirements of the Bathing Water Directive (Directive 2006/7/EC). According to the European Environment Agency’s European Bathing Water Quality in 2025 report, Greece continues to demonstrate high bathing water quality, with the majority of monitored sites classified as excellent quality.

In the wider area surrounding the shorebase facilities at the Port of Igoumenitsa, the nearest designated bathing waters are located along the northern and southern coastal areas of Igoumenitsa Bay. To the northwest of the port, the Drepano–Makrygiali bathing water profile is located, while to the south, within the Plataria area, designated profiles include Plataria 3, Plataria 2, and Plataria–Oikismos. Additional bathing waters in the wider coastal area include Gallikos Molos, Bella Vraka, Zavia, Megas Ammos, Agia Paraskevi, Arillas, and Karavostasi. Available monitoring results indicate that these designated bathing waters are

classified as Excellent. This classification applies to the designated bathing-water profiles and does not represent the operational waters within the port basin, where local conditions may be influenced by port operations, vessel movements, and surface-water runoff.

For the Asopus-1 exploration well, the nearest designated bathing water is located at Mathraki Island, within the Diapontia Islands, and is also classified as Excellent. No designated bathing waters are located in the immediate vicinity of the well location due to its offshore setting and distance from coastal areas.

Accordingly, designated bathing waters in the vicinity of both the shorebase facilities and the Asopus-1 exploration well represent sensitive coastal receptors, and their consideration within the impact assessment is supported by appropriate pollution prevention and emergency response measures.

### 8.13.3 Groundwater

According to the 2nd Revision of the Epirus RBMP (EL05), the shorebase facilities of the Project are located within the groundwater body EL050A070 “Filiates–Igoumenitsa System”, which forms part of the Kalamas River Basin (EL0512).

The Filiates–Igoumenitsa Groundwater System (EL050A070) is classified as having good qualitative (chemical) status and good quantitative status. Elevated concentrations of chloride (Cl) and sulphate (SO<sub>4</sub>) are attributed to the natural hydrogeochemical background, while no parameter exceedances are reported as being associated with anthropogenic pressures. The main pressures identified for this groundwater body include agricultural activities, urbanisation, livestock farming, and wastewater treatment plant operation. Localised impacts from seawater intrusion are also reported. The groundwater body is not included in the Register of Protected Areas under Article 7 of WFD.

### 8.13.4 Seawater

#### 8.13.4.1 Marine Strategy Framework Directive

Under the Marine Strategy Framework Directive (MSFD), the proposed Asopus-1 exploration well is located within the “Ionian Sea and Central Mediterranean Sea” subregion. The Greek MSFD monitoring programme uses the nearest open-sea monitoring station, “Othonoi (Ionio)”, to support the assessment of Good Environmental Status (GES) in the wider project area. The monitoring programme evaluates relevant qualitative descriptors, including biodiversity (D1), eutrophication (D5), seafloor integrity (D6), hydrographical conditions (D7), contaminants (D8), and marine litter (D10).

A review of the Water Information System for Europe (WISE/EIONET) data repository indicates that site-specific raw monitoring data for the Othonoi station are not publicly available. Therefore, the assessment relies on information available for the broader Ionian Sea/Ionian–Adriatic reporting unit. At this subregional level, the Nested Environmental Status Assessment (NEAT) tool applied by the Hellenic Centre for Marine Research (HCMR) classifies the Ionian–Adriatic area as having Good overall trophic status.

Overall, the wider Ionian Sea area has been assessed as achieving GES for the majority of assessed descriptors. National assessments indicate that environmental quality standards are generally achieved for

eutrophication (D5) and contaminants in the marine environment (D8) and seafood (D9). The region also demonstrates a decreasing trend in the introduction of new non-indigenous species (D2), while 10 out of 11 assessed commercial fish stocks (D3) are considered to achieve GES, although some assessments are based on low-confidence data. Other descriptors, including biodiversity (D1), seafloor integrity (D6), and marine litter (D10), show partial evidence of achieving GES, however, their assessment remains subject to uncertainty due to limitations in data availability and spatial coverage.

#### 8.13.4.2 Seawater Quality

##### 8.13.4.2.1 Physic-chemical characteristics of the water column (CTD profiles)

The water column investigated showed a well-developed thermo-haline stratification throughout the study area, with highly comparable conditions among the Asopus-1 group station, Northern station group, Blank stations and Reference Stations, the latter showing only local differences related to bathymetry, location and sampling period. Surface waters were characterized by temperatures of approximately 16 °C, decreasing to ~14 °C in deeper layers, while salinity increased from < 38.8 PSU in the upper water column to subsurface maxima exceeding 39.1 PSU. This vertical structure was consistent with the presence of Modified Atlantic Water (MAW) in the upper layer, underlain by Levantine Intermediate Water (LIW), while deeper waters likely reflected transitional conditions resulting from mixing between LIW and Eastern Mediterranean Deep Water (EMDW). Conductivity closely mirrored the thermo-haline structure, pH remained weakly variable (generally 8.17 – 8.29), whereas Dissolved Oxygen (DO) exhibited a marked oxycline associated with the thermo-halocline, with concentrations ranging between 3.77 and 4.87 mL L<sup>-1</sup> and saturation values consistently below 100 %, indicating slight to moderate undersaturation throughout the investigated water column. Chlorophyll fluorescence was generally low, with a Deep Chlorophyll Maximum (DCM) typically occurring between ~70 and 100 m depth and peak concentrations around 0.3 µg L<sup>-1</sup> Chl-a. Turbidity remained low across all stations, generally below 0.5 FTU, with only near-surface values occasionally exceeding 1 FTU.

##### 8.13.4.2.2 Total Suspended Solids (TSS), Total Organic Carbon (TOC) and nutrients

TSS showed limited spatial variability across all station groups, with average concentrations between 11.01 ± 2.46 mg L<sup>-1</sup> around Asopus-1 (and intermediate average values at the Blank and Reference Stations). TOC was below the analytical LoQ in all samples except Surface and Middle sampling depths at Italy Ref.

Nutrient concentrations were generally low. Ammonium (NH<sub>4</sub><sup>+</sup>) reached a maximum of 0.065 mg L<sup>-1</sup> N at Italy Ref Surface, while Nitrite (NO<sub>2</sub><sup>-</sup>) remained below the LoQ in almost all samples and never exceeded 0.003 mg L<sup>-1</sup> N. Nitrate (NO<sub>3</sub><sup>-</sup>) was detected only sporadically, with a maximum concentration of 0.510 mg L<sup>-1</sup> N at Italy Ref Surface. Orthophosphate (PO<sub>4</sub><sup>3-</sup>) reached a maximum of 0.0167 mg L<sup>-1</sup> P at D1b Surface, whereas Total Phosphorus (P-Tot) attained 90 µg L<sup>-1</sup> at D5b Surface. Comparison with the reference values adopted within the Greek MSFD implementation framework showed a limited number of exceedances for NO<sub>3</sub><sup>-</sup> and PO<sub>4</sub><sup>3-</sup>; the former exceeded the reference value only at D5b Middle and Italy Ref Surface, while the latter exceeded its reference value at D1b Surface, D7b Middle and Bottom, Kerkyra Ref Surface and Middle, and at all Sampling Depths of Italy Ref.

#### 8.13.4.2.3 Metals and metalloids

Among metals and metalloids, Cd, Cr VI, Co, Hg and Sn were consistently below the analytical LoQ, while Cr-Tot and Pb were only sporadically detected. Cu and Ni were generally low and detected in a limited number of samples, except at Italy Ref, where maxima of 30.0 and 10.0  $\mu\text{g L}^{-1}$  were recorded. As, Ba, Fe and Zn were quantifiable in all samples. As and Ba showed limited variability, ranging from 1.0 to 5.5  $\mu\text{g L}^{-1}$  and between 7.0 and 12.0  $\mu\text{g L}^{-1}$ . Greater variability characterized Fe (33 – 290  $\mu\text{g L}^{-1}$ ) and Zn (24 – 160  $\mu\text{g L}^{-1}$ ). Comparison with the AA-EQS of Directive 2013/39/EU (as applied in Greece) and the Italian SQA-MA values (D.Lgs. 172/2015) identified only limited exceedances for As, Pb and Ni. As exceeded the Italian SQA-MA of 5  $\mu\text{g L}^{-1}$  in two samples from Asopus-1 group station and five from the northern group station. Pb exceeded the applicable threshold of 1.3  $\mu\text{g L}^{-1}$  (reported for both Greek and Italian regulations) only at Italy Ref Middle and Bottom, while Ni exceeded the corresponding reference value of 8.6  $\mu\text{g L}^{-1}$  (both considered regulations) only at Italy Ref Bottom. All remaining metals complied with the applicable regulatory standards.

#### 8.13.4.2.4 Total Petroleum Hydrocarbons (TPH) and Polycyclic Aromatic Hydrocarbons (PAHs)

TPH, including both light-chain ( $C \leq 10$ ) and heavy-chain ( $C_{10} - C_{40}$ ) fractions, and all investigated PAHs, including their sum, were below the analytical LoQs at all Sampling Depths and Stations. Consequently, all hydrocarbon compounds for which regulatory reference values were available were below the applicable reference values.

### 8.14 Environmental trends (in the absence of the project)

In the absence of the Project, the environmental evolution of the study area will continue to be influenced by existing anthropogenic pressures, natural environmental variability, and broader climate change trends.

Within the offshore concession area (Block 2), the marine environment will continue to support existing maritime activities. At the Asopus-1 location, the bathyal mud seabed and associated deep-sea habitats will not be subject to drilling-related disturbance. Future changes in seabed morphology and shallow stratigraphy will continue to be governed primarily by natural sedimentary, tectonic, and gravitational mass-movement processes, while localized pressures associated with existing activities, including submarine infrastructure and bottom-contact fishing, may continue to occur.

The marine acoustic and atmospheric environments will continue to be influenced by ongoing maritime activities. International shipping and maritime transport will remain sources of atmospheric emissions, including sulfur oxides (SOx), nitrogen oxides (NOx), and particulate matter, as well as continuous low-frequency underwater noise. Commercial fishing activities by Greek and Italian fleets operating within Geographical Sub-Areas (GSA) 19 and 20 are expected to remain an existing source of pressure on pelagic and benthic ecosystems. In addition, the wider spatial planning framework identifies potential future developments in the northern Ionian Sea, including renewable energy projects such as the proposed Italian offshore wind farms located west of Asopus 1 exploration well.

The evolution of the regional environmental baseline will also be influenced by climate change trends. The Mediterranean basin is warming at a rate above the global average, with associated changes in oceanographic conditions, including seawater temperature and salinity patterns. These changes, together

with processes such as seawater acidification, may influence marine habitats, species distributions, and ecosystem functioning over time.

At the shorebase facilities at the Port of Igoumenitsa, existing port operations and associated logistics activities will continue to determine land use and environmental conditions. As the facilities are located within an already developed port environment, future environmental conditions in the area are expected to remain primarily influenced by existing operational activities and wider environmental trends. In the absence of the Project, no additional Project-related infrastructure development or operational pressures would occur, and the conditions in the vicinity of the shorebase facilities would be expected to remain broadly consistent with the current baseline.

## 8.15 Risks To human health, cultural heritage and/or the environment mainly due to accidents or disasters

### 8.15.1 General

This section presents the risks to human health, cultural heritage, and/or the environment due to accidents and disasters, in accordance with the requirements of Directive 2014/52/EU, which was transposed into Greek law through the following legislation:

- Joint Ministerial Decision (KYA) oik.5688/2018: “Amendment of the annexes of Law 4014/2011 (Government Gazette 209/A) according to Article 36A of this law, in compliance with Directive 2014/52/EU ‘amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment’ of the European Parliament and of the Council of 16 April 2014” (Government Gazette 988/B/2018), and
- Joint Ministerial Decision 1915/2018: “Amendment of Ministerial Decisions No. 48963/2012 (Government Gazette B’ 2703) and No. 170225/2014 (Government Gazette B’ 135), issued under the authorization of Law 4014/2011 (Government Gazette 209/A), in compliance with Directive 2014/52/EU on the amendment of Directive 2011/92/EU concerning the assessment of the effects of certain public and private projects on the environment,” of the European Parliament and of the Council dated 16 April 2014 (Government Gazette 304/B/2018).

The key terms used in this section are defined below.

- Natural disaster: The occurrence, or probability of occurrence, of a potentially damaging natural hazard, including extreme weather events such as storms, floods, and extreme temperatures, or ground-related hazards such as subsidence, landslides, and earthquakes, within a defined time period and geographical area. According to Directive 2014/52/EU, natural disasters include floods, sea-level rise associated with climate change, and earthquakes. The United Nations defined natural disasters in 1992 as serious disruptions to the functioning of society that cause widespread human, material, or environmental losses exceeding the affected society’s ability to cope using its own resources. According to the United Nations, natural disasters are estimated to kill approximately 90,000 people and affect 160 million people worldwide each year.
- Major accident: Directive 2014/52/EU does not provide a corresponding definition of a major accident. A relevant definition is provided in Directive 2012/18/EU on the control of major-accident hazards

involving dangerous substances, where a major accident is defined as an event—such as a large release, fire, or explosion—resulting from uncontrolled developments during the operation of any establishment covered by the directive, which causes serious immediate or delayed risks to human health or the environment, inside or outside the establishment, and involves one or more dangerous substances. In general, a major accident can be considered an event that causes serious damage to human health, well-being, and/or the environment, either immediately or with a delay, such as loss of life, permanent injury, or permanent/long-term damage to environmental components that cannot be remedied with minor cleanup and restoration efforts.

- **Exposure:** People, property, systems, or other elements located within hazard zones and therefore subject to potential losses (UNISDR Terminology on Disaster Risk Reduction, United Nations, 2009).
- **Vulnerability:** The characteristics and conditions of a community, system, or asset that make it susceptible to the harmful effects of hazards (UNISDR Terminology on Disaster Risk Reduction, United Nations, 2009).
- **Risk of occurrence:** The likelihood that an impact will occur, combined with the consequences of that impact for the relevant receptor if it occurs (UNISDR Terminology on Disaster Risk Reduction, United Nations, 2009).
- **Significant impact:** An impact arising from an event that results in loss of life, permanent injury, or long-term damage to an environmental receptor.

Natural disasters may be distinguished and classified according to their causes and severity. The World Health Organization classifies them into the following categories:

- Hydrological, such as floods.
- Geophysical, including earthquakes, volcanic eruptions, and landslides.
- Meteorological, such as storms and thunderstorms.
- Climatological, such as extreme very high or very low temperatures and natural fires.
- Biological, caused by the exposure of living organisms to pathogenic microorganisms.

The size-frequency relationship describes how the potential consequences of a disaster depend on both the magnitude of the event and its frequency of occurrence. Large-scale events are typically less frequent but may have severe consequences, while more frequent events are generally of lower intensity. Average expected consequences are therefore assessed by considering both event magnitude and frequency.

In Greece, the most common natural disasters are due to earthquakes, heavy rainfall and floods, fires that can lead to deforestation of areas which, when steeply sloped, promote the occurrence of landslides, and heatwaves.

Technological disasters are primarily man-made events resulting from technological hazards that are not properly managed or from technological incidents caused by human error, equipment failure, or organisational and administrative deficiencies. They may also be triggered by natural hazards, such as earthquakes, lightning, or heavy rainfall, or by deliberate human actions. Although technological disasters are generally infrequent, they may have very serious consequences.



Depending on their intensity and extent, technological disasters may cause loss of life or injury to workers at the accident location and to populations located permanently or temporarily nearby. They may also cause property damage, disruption of social and economic life, and environmental degradation.

The usual classification of technological accidents is as follows:

- Chemical accidents at industrial facilities: occur at industrial sites (production, processing, or storage) resulting in severe environmental pollution from the release of heavy metals and toxic chemical substances.
- Accidents involving the transportation of hazardous materials: happen during the transport of dangerous goods by various means of transport (road, rail, maritime, air).
- Transportation accidents: road, rail, maritime, air. These are conventional transportation accidents, which usually result in loss of human life and injuries, but do not have significant impacts on the environment.
- Dam failure: rare events with potentially major consequences, including loss of life and significant environmental impacts.
- Nuclear accidents: usually involve the release of radioactive elements into the environment and have long-term impacts on both human health and the environment.

Although environmental disasters are not everyday events and are therefore not frequent causes of death or material damage, their potential to cause unexpected catastrophic losses makes them highly significant. Environmental disasters typically share the following characteristics:

- The source of the disastrous event is clear and produces characteristic outcomes (e.g., a flood causes deaths by drowning).
- The warning time is usually short.
- Most losses caused, whether in human lives or property, occur immediately following the event.
- The risk of exposure is largely involuntary, usually due to populations residing in hazardous areas.
- The disaster has such intensity and scale that it requires an immediate response.

This section describes potential serious accident or disaster risks in the study area arising from external factors outside the Project, in accordance with Joint Ministerial Decision 1915/2018 and taking into account the information presented in the preceding sections of Chapter 8. Based on the guidance in Directive 2014/52/EU, the main external risks to which the Project may be vulnerable are primarily natural hazards and include the following:

- Natural Disasters:
  - Flooding from inland waters,
  - Flooding from coastal waters,
  - Sea level rise,
  - Extreme weather events (windstorms, lightning, frost, hail),
  - Fires,
  - Landslides, slope failures due to flooding and/or erosion,
  - Earthquakes,

- Pandemics (e.g., COVID-19, H1N1).
- Man-made accidents / disasters:
  - Road accidents (vehicle collisions, vehicle rollovers, explosions, fires, etc.),
  - Air accidents (helicopter/aircraft crashes),
  - Technological accidents / disasters resulting from failures of existing infrastructure or other human activities (fuel stations, livestock units, photovoltaic plants, agriculture, etc.).
  - Sabotage (e.g., arson, vandalism, explosive device, use of radioactive, nuclear, biological, and chemical substances, other unlawful acts).

The “Statistical Overview of Emergency Declarations” of the General Secretariat for Civil Protection (GSCP, 2020) indicates that, during the period 2014–2020, the main categories of disastrous events resulting in emergency declarations in the Region of Epirus included extreme rainfall events, floods, and earthquakes. Within the Thesprotia Regional Unit, where the onshore Project facilities are located, these events represent the primary recorded natural hazards.

## 8.15.2 Natural disasters

### 8.15.2.1 Seismic hazard

The seismotectonic setting of the Mediterranean is controlled by the slow convergence of the African (Nubia) and Eurasian tectonic plates. The Eastern Mediterranean basin is tectonically active, driven primarily by two subduction zones: the Hellenic subduction zone located south of Greece and the Calabrian subduction zone south of Italy (Miramontes et al., 2023). These peripheral tectonic margins dictate the regional seafloor morphology and concentrate active seismogenic faults and historical earthquake epicenters.

Within this structural framework, the Apulian platform and the Ionian Sea constitute the “Ionian-Apulian microplate”, which rotates counterclockwise relative to the African plate (Gallais et al., 2011). This movement induces diffuse internal deformation across the deep Ionian basin (Gallais et al., 2011). Consequently, while the region of Western Greece and the Ionian Sea experiences frequent small to medium earthquakes alongside intermittent strong seismic events, the seismicity is spatially variable and concentrated along the subduction complexes.

At the location of the Asopus-1 exploration well, the local tectonic regime is characterized by a structurally uplifted carbonate platform environment, known as the Apulian platform. This offshore area is geographically separated from the compressive subduction zones of the Hellenic and Calabrian arcs. Based on the spatial analysis of historical seismicity catalogues (1901–2020) and the mapped active fault network provided by the Seismotectonic Atlas of Greece (NKUA), the project area is situated away from high-density earthquake epicenters and is characterized by relatively weak to moderate background seismicity. Furthermore, sub-bottom profiler and acoustic data acquired during the LOT 01 Geophysical Survey Campaign indicate that while buried fault structures with offsets of several metres are present, no corresponding fault scarps or measurable fault-related displacements were identified at the seabed within a 500-meter radius of the well location. The local seabed morphology therefore does not show evidence of recent active tectonic deformation identifiable at the survey scale.

### 8.15.2.2 Flood Risk

The Project's shorebase facilities at the Port of Igoumenitsa are located within the boundaries of the Area of Potential Significant Flood Risk (APSFR) designated as "Lower Reaches and Delta of the Kalamas River and the Coastal Zone of Igoumenitsa" (Κάτω ρους – Δέλτα π. Καλαμά και παράκτια ζώνη Ηγουμενίτσας), identified as EL05APSFR008 within the Epirus Water District (EL05). The 1st Revision of the Epirus Flood Risk Management Plan was approved and published under GG 2775/B/05.06.2025.

The APSFR EL05APSFR008 covers an area of approximately 70.5 km<sup>2</sup> and forms part of the Kalamas River Basin (EL12). It includes the downstream section of the Kalamas River, extending from the Kalamas irrigation and hydroelectric dam at Gitani to the river mouth, with a total length of approximately 27 km. The southern part of the APSFR also includes the Vlachos Stream (approximately 7.5 km), the Lakkas Stream (approximately 2.2 km), which discharge south of the Port of Igoumenitsa, and the Goura Stream (approximately 4.7 km) near Nea Selefkeia.

### 8.15.2.3 Rise of Mean Sea Level (MSL)

The Mediterranean Sea is considered sensitive to long-term climate and sea-level changes due to its semi-enclosed characteristics and geological setting (Coll et al., 2010). Future mean sea level (MSL) projections for the 21st century indicate a progressive increase under different climate change scenarios. For the Mediterranean basin, probabilistic projections estimate a median MSL rise by 2100 of approximately 54 cm under the intermediate RCP4.5 scenario and 72 cm under the high-emission RCP8.5 scenario (Kopp et al., 2014; Marcos et al., 2023).

In addition to absolute MSL changes, relative sea-level rise (RSLR) and coastal migration assessments available through the European Atlas of the Seas identify spatial differences along European coastlines, including areas affected by erosion, submergence, stability, or accretion (EMODnet Geology). These datasets support the assessment of potential climate-related pressures on coastal areas and infrastructure.

At the Asopus-1 exploration well location (Block 2), the deep offshore setting limits exposure to direct coastal effects associated with sea-level rise, such as erosion or coastal inundation. However, the Project's shorebase facilities at the Port of Igoumenitsa are located within a low-lying coastal area and may be subject to long-term climate-related pressures, including sea-level rise, coastal flooding, and erosion.

### 8.15.2.4 Tsunamis

As mentioned above, tsunami generation in the Mediterranean is primarily associated with seismic activity along the Hellenic Arc, regional tectonic structures, and submarine slope failures triggered by earthquakes or volcanic activity (Maramai et al., 2014; Lionello et al., 2023). Historical records indicate that the Hellenic Shelf has experienced 160 probable and definite tsunami events since AD 1628 (Seismotectonic Atlas of Greece v1.1, NKUA). The probability of a major tsunami originating directly within the offshore Project area is considered low based on currently available regional seismotectonic information and its distance from the main tsunamigenic sources. However, the onshore facilities at the Port of Igoumenitsa and surrounding coastal areas may be exposed to remotely generated tsunami events ("tele-tsunamis") originating from

distant seismic sources along the Hellenic Arc or from submarine landslides affecting the wider Ionian and Hellenic margins (Fischer et al., 2015; Seismotectonic Atlas of Greece v1.1, NKUA).

### 8.15.2.5 Extreme weather events

The risks associated with extreme meteorological events for the onshore facilities include storms, strong winds, and extreme temperatures. Storm events depend on local atmospheric conditions and are influenced by factors such as air mass movement, humidity, temperature variations, surface characteristics, local morphology, and drainage conditions. Floods and storms represent significant natural hazards in Europe due to their potential economic and environmental impacts, with the severity of consequences depending on the intensity and duration of the event and the characteristics of the affected area. For the study area, available meteorological records from the nearest station indicate generally moderate wind conditions, with strong wind events occurring occasionally but not frequently. Therefore, the vulnerability of the area to storm and wind-related hazards is considered to be moderate, with associated potential impacts on human health, infrastructure, cultural heritage, and the environment.

Extreme temperatures, particularly heat events, represent a potential hazard mainly for human health. However, within the study area, where dense urban development and heat-island effects are limited, vulnerability to extreme temperatures is considered low. Climate projections for the period 2031–2060 indicate that the wider onshore study area is not expected to experience a significant increase in the occurrence of very hot days ( $TX > 35^{\circ}\text{C}$ ) under either the RCP 4.5 or RCP 8.5 climate scenarios (Adaptive Greece Hub, 2026). Consequently, the associated risk from extreme temperatures to human health, cultural heritage, and the environment is considered likely to be not significant.

### 8.15.2.6 Risks of landslides / subsidence / slope failures

Gravitational mass movements, such as submarine landslides and slope failures, are significant geological hazards typically associated with steep slopes and fault scarps in the submarine environment. In the broader region of the Hellenic shelf, these mass movements affect Late Pleistocene and Holocene deposits and are primarily triggered by regional seismic activity and sediment liquefaction. Additional localized factors that may contribute to these movements include steep seabed gradients and the presence of gas within sediment pore spaces (Ferentinos et al., 2014; Fischer et al., 2015).

Based on landslide susceptibility mapping from EMODnet, seabed slope and bathymetry are the two main environmental variables controlling offshore landslide susceptibility (Innocenti et al., 2020). Slope gradient represents the dominant factor influencing landslide occurrence, contributing approximately 82% to the predictive capacity of occurrence models (Innocenti et al., 2020). While the highest susceptibility values are generally associated with steep and tectonically active regions of the Mediterranean, including the Aegean arc, the Block 2 project area is located within a zone characterized by low susceptibility values.

At the precise location of the Asopus-1 exploration well, the probability of encountering submarine landslides or active gravitational mass movements is considered low. High-resolution geophysical surveys conducted during LOT 01 within a 500 m radius of the well indicate relatively gentle seabed gradients, with an average slope of approximately  $1.3^{\circ}$ . Although localized slope increases exceeding  $10^{\circ}$  occur along the flanks of exposed harder sediments associated with the MTD, no fault scarps or active deformation features are

identified within the immediate area of the well. Furthermore, acoustic data confirm the absence of recent remobilization of the underlying MTD unit or active seabed instability. Consequently, the potential for slope instability, active subsidence, or mass failure at the Asopus-1 drilling location is considered low based on the available geophysical and bathymetric data.

The shorebase facilities of the Project are located within the EL05, for which the 1st Revision of the FRMP has been developed and approved under GG B' 2775/2025. According to the current FRMP, annual soil erosion rates within the wider study area of the shorebase facilities range from very low to low, with estimated values of 0–10 t/ha. These values indicate limited susceptibility to soil erosion under current environmental conditions.

#### 8.15.2.7 Fire risk

The occurrence and behavior of forest fires are influenced by a combination of natural, geomorphological, meteorological, and vegetation-related factors. Solar radiation, air temperature, and surface temperature affect ignition potential, while elevation influences temperature and humidity conditions that control fire spread. In addition, slope gradient affects fire propagation, as fire intensity generally increases when moving uphill due to the preheating of vegetation by rising hot air. Vegetation characteristics also play an important role, as different plant communities exhibit varying levels of flammability depending on species composition, fuel load, and moisture content.

Forest fires represent one of the most significant natural hazards affecting ecosystems, property, and human activities in Greece. Their occurrence is mainly associated with anthropogenic activities, including agricultural burning, discarded cigarettes, uncontrolled waste burning, intentional ignition, and accidental causes related to transport, industrial activities, or equipment failures.

Fire development is primarily controlled by three main factors: temperature, oxygen availability, and fuel characteristics, including fuel quantity, type, and moisture content. In Greece, forest fires occur predominantly within the Mediterranean vegetation zone, generally at elevations below 600 m, where flammable vegetation types such as pine forests, kermes oak formations, and shrublands are widespread. Although less frequent, fires may also occur at higher elevations under favorable climatic conditions.

The shorebase facilities are located within an existing port area on land classified as agricultural in the relevant mapping datasets, while areas surrounding the facilities include sections of dense natural vegetation, which may contribute to local fire susceptibility. According to the fire risk projections provided by EEA through the Adaptive Greece platform, the wider study area is classified within a medium fire risk category for the period 2031–2060 under both the RCP4.5 and RCP8.5 climate scenarios (Adaptive Greece, 2026).

### 8.15.3 Anthropogenic accidents / disasters

#### 8.15.3.1 Road transport accident risks

The risk of road accidents is associated with traffic conditions within the onshore study area, particularly around the Project's shorebase facilities, where vehicle movements increase during the summer period. The

local road network is generally in good condition; therefore, the likelihood of a serious road accident is considered relatively low and is primarily influenced by driver behavior, traffic intensity, and compliance with road safety measures.

### 8.15.3.2 Risks of accidents from maritime transport

Maritime transport is of strategic importance to both national and EU economies, supporting international trade, connectivity between regions, and the movement of passengers and goods. Shipping operations are regulated through harmonized national legislation based on international conventions and resolutions adopted by the International Maritime Organization (IMO). In recent years, IMO has introduced a range of measures aimed at preventing marine accidents, reducing their consequences, and improving safety standards in international maritime transport.

According to IMO Resolution A.849 of 27 November 1997, which adopted the Code for the Investigation of Marine Casualties and Incidents (Casualty Investigation Code), a marine casualty is defined as any incident or sequence of incidents at sea resulting in loss of life, loss or damage to a vessel, grounding, collision, loss of manoeuvrability, damage to marine infrastructure, severe environmental damage, or the potential to cause such impacts (IMO, 2008).

The level of maritime safety within EU waters remains high. However, according to the Annual Overview of Marine Casualties and Incidents 2025 published by the European Maritime Safety Agency (EMSA), 2,659 marine casualties and incidents were reported in 2024. This represents a reduction compared with 2023, when 2,709 occurrences were recorded, but a slight increase compared with 2022, when 2,635 occurrences were reported (EMSA, 2025). During the period 2015–2024, a total of 26,751 marine casualties and incidents were reported, corresponding to an annual average of approximately 2,675 events. Of these, 53.4% were classified as less serious casualties, 28.4% as serious casualties, 2.7% as very serious casualties, and 15.5% as marine incidents (EMSA, 2025).

The main risks associated with maritime transport include vessel collisions and allisions, particularly within established shipping routes or areas where vessels with restricted manoeuvrability, such as drilling or seismic vessels, operate in proximity to cargo vessels, tankers, passenger vessels, and fishing vessels. According to EMSA (2025), collisions accounted for approximately 20.5% of ship occurrences and represented a significant contributor to fatalities and injuries. Other relevant risks include accidental releases or discharges of hazardous and non-hazardous substances, including chemicals, bilge water, sewage, solid waste, and operational residues, which may affect seawater quality and marine ecosystems.

Additional risks are associated with loss of vessel control or manoeuvrability due to propulsion failure, steering failure, electrical power loss, or machinery malfunction. Loss of propulsion was the most frequently reported ship casualty event during 2015–2024, accounting for approximately 22% of occurrences (EMSA, 2025). Grounding or stranding may occur due to navigational errors, adverse weather conditions, or loss of propulsion or steering capability. Contact incidents involving fixed or floating objects, including port structures, breakwaters, buoys, offshore installations, floating cargo, or other obstacles, represent another significant risk category and accounted for approximately 14.6% of ship occurrences (EMSA, 2025). Fire and explosion events, associated with fuel, machinery spaces, electrical systems, cargoes, or other flammable substances, also represent potential maritime hazards.



The potential consequences of maritime accidents include fatalities and injuries affecting crew, passengers, and third parties; damage to or loss of vessels, including immobilization, abandonment, loss of seaworthiness, and the requirement for towing, emergency assistance, or search and rescue operations. Environmental consequences may include oil spills involving marine fuels, bunkers, lubricants, hydraulic fluids, or oil cargo, as well as the release of ship-generated wastes, cargo residues, hazardous substances, chemicals, and other dangerous materials. Such events may result in air and marine pollution, affecting seawater quality, coastal areas, marine habitats, and sensitive biological receptors. Maritime accidents may also cause damage to other vessels, port infrastructure, offshore installations, and other assets, while disrupting navigation, port operations, and wider maritime activities.

#### 8.15.3.3 sabotage, vandalism, and other illegal acts

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Sabotage, including acts of vandalism, arson, or other intentional damage, represents a potential cause of accidents or emergency events within the study area. However, no such incidents have been recorded to date within the study area, and the likelihood of occurrence is considered very low, taking into account the offshore location of the Project and the security measures and operational procedures expected to be implemented during Project.

## 9 Quantitative risk assessment

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### 9.1 Introduction

#### 9.1.1 Background

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The background of the project is defined in earlier chapters of the present ESIA. In summary, the operations include the drilling of a single offshore exploration well, named Asopus-1, in Block 2 of the Ionian Sea, offshore western Greece, in 2027.

The objective of this proposed activity is to evaluate subsurface geological formations and assess the potential presence of hydrocarbons. The well will be drilled using a mobile offshore drilling unit (MODU), specifically the Stena DrillMAX drillship, which is purpose-built for deep-water drilling operations.

The proposed activity is temporary and limited in scope, comprising the drilling, evaluation, and subsequent plugging and abandonment of the exploration well. No oil or gas production or well testing is planned as part of this project. If hydrocarbons are identified, any further appraisal or development activities would be subject to separate permitting and environmental assessment processes.

The primary drilling activity, including well construction, formation evaluation, and plugging and abandonment, will take place offshore. The well will be drilled from the Stena DrillMAX drillship through the seabed to the target formations and will be used solely for exploration and data acquisition purposes. Well construction and abandonment will be carried out in accordance with established offshore practices to ensure well integrity and prevent unplanned releases to the marine environment.

The operational area lies approximately 3.2 km (1.7 nautical miles) from the Italian EEZ and at a water depth of ~840 m. There are no islands, coastal features, or fixed subsea installations in the immediate vicinity of the well location.

The offshore operation will be supported by routine marine and aviation logistics, including helicopter operations from Corfu Airport and the use of platform supply vessels (PSVs) operating along established navigation routes between the drillship and an existing onshore supply base at the port of Igoumenitsa. These support activities do not require new construction or modification of coastal or onshore infrastructure.

#### 9.1.2 Purpose, objectives and scope

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This section of the Environmental and Social Impact Assessment (ESIA) summarises the Quantitative Risk Assessment (QRA) studies' process performed to date in order to determine the risk to personnel associated with the proposed exploration operations.

This document identifies the applicable Major Accident Hazards (MAH) associated with using the Stena DrillMAX MODU for the proposed Asopus-1 project exploratory drilling activities.

The boundaries of the QRA/RoMH scope are as follows:

- Identification of MAHs associated with the DrillMAX MODU's activities for the Asopus-1 project.

- Assessment of risks associated with the following:
  - Blowouts
  - Fires, explosions, and toxic releases
  - Marine events
  - Other Hazards

In addition, the following are covered in the report:

- Assessment of the identified hazards against the risk acceptance criteria
- Highlighting the uncertainties and limitations in QRA
- Recommendations based on review of the existing DrillMAX QRA

For completeness, calculated IRPA levels for worker groups are presented and discussed in this report even though they have no direct relationship to the potential environmental impact of the described facilities. The safety of employed staff working offshore clearly influences the socio-economic wellbeing of the wider project area.

The purpose of the QRA is to provide a numerical estimate of the level of risk to people, associated with identified and defined Major Accidents. Risk is normally presented as IRPA (Individual Risk Per Annum – the chance each worker has of suffering a fatal accident per year of work) and PLL (Potential Loss of Life: the number of staff that might be killed in a defined period). QRA provides a means to compare the derived risk levels against industry accepted tolerability criteria and also provides a baseline against which potential risk reduction measures can be assessed.

Whilst the primary objective of the QRA is to assess risk to personnel, the assessment also identifies major accident scenarios with the potential to affect the environment. Conservative blowout scenarios from the existing Stena DrillMAX QRA are retained for personnel-risk assessment purposes. Following incorporation of the project-specific K-BOS E-SID barrier, however, a sustained uncontrolled subsea blowout is not adopted as the representative environmental release scenario for the ESIA. The representative environmental scenario is the instantaneous loss of 350 m<sup>3</sup> of MGO from a PSV fuel tank, as assessed in the oil spill modelling (Section 9.7).

No QRA was undertaken for the onshore support and logistics facilities as part of this chapter; the environmental and social risks associated with those activities are assessed in the relevant ESIA sections.

The chapter also presents the oil spill modelling undertaken for the representative environmental release scenario: an instantaneous loss of 350 m<sup>3</sup> of Marine Gas Oil from a fuel tank on board a Platform Supply Vessel supporting the drilling campaign. The assessment considers the unmitigated transport, weathering and fate of the released MGO at the sea surface, within the water column and at the shoreline.

### 9.1.3 Methodology and approach

The existing Stena DrillMAX QRA documentation has been used as the basis for identifying and assessing the major accident hazards (MAH) to personnel associated with drilling the Asopus-1 exploration well and for evaluating the calculated risks against the applicable risk acceptance criteria.

This approach ensures the applicable aspects of the analysis completed as part of the DrillMAX QRA are tailored to the specifics of the Asopus-1 project.

The environmental consequences of the representative accidental release scenario were assessed separately using stochastic and deterministic oil spill modelling. The representative scenario is the instantaneous loss of 350 m<sup>3</sup> of MGO from a PSV fuel tank. Season 1 stochastic results provide the primary risk-envelope basis for the proposed drilling period, while the Season 2 deterministic simulations are retained as supplementary sensitivity cases.

#### 9.1.4 Legislative and regulatory requirements

This QRA estimates the numerical level of risk associated with major accidents. Directive 2013/30/EU on the safety of offshore oil and gas operations was transposed into Greek law through Law 4409/2016. Major accidents are defined in Article 2 of Directive 2013/30/EU and the corresponding provisions of Law 4409/2016 as follows:

- a. *an incident involving an explosion, fire, loss of well control, or release of oil, gas or dangerous substances involving, or with a significant potential to cause, fatalities or serious personal injury;*
- b. *an incident leading to serious damage to the installation or connected infrastructure involving, or with a significant potential to cause, fatalities or serious personal injury;*
- c. *any other incident leading to fatalities or serious injury to five or more persons who are on the offshore installation where the source of danger occurs or who are engaged in an offshore oil and gas operation in connection with the installation or connected infrastructure; or*
- d. *any major environmental incident resulting from incidents referred to in points (a), (b) and (c).*
- e. *for the purposes of determining whether an incident constitutes a major accident under points (a), (b) or (d), an installation that is normally unattended shall be considered attended.*

The assessment has been prepared with reference to the applicable requirements of Law 4409/2016 and HEREMA guidance documents. This QRA assessment has been prepared to address the relevant requirements, including clauses 1 and 4 as below:

1. Operators shall ensure that all suitable measures are taken to prevent major accidents in offshore hydrocarbons operations.
4. Operators shall ensure that offshore hydrocarbons operations are carried out on the basis of systematic risk management so that the residual risks of major accidents to persons, the environment and offshore installations are tolerable.

It is noted that the Report of Major Hazards, (RoMH) of Stena DRILLMAX, has been submitted to HEREMA (Ref. Number: 36452/14.07.2026) and is currently under review.

This chapter presents the project-specific QRA conclusions and the results of the oil spill modelling undertaken to support the ESIA, having regard to the applicable SEA requirements and relevant legislation.

## 9.1.5 Risk acceptance criteria

The Risk Acceptance Criteria (RAC) have been established accordance with the HEREMA ALARP Guidance, the existing Stena DrillMAX QRA framework, and applicable international offshore risk management practices.

The regulations define a safety level for people and assets and require RAC to reflect the safety objectives and distinctive characteristics of the activities. Other factors considered in the formulation of the RAC for the MODU vessel include:

- recognised international standards for the activity.
- requirements regarding risk-reducing measures.
- knowledge of accidental events and their effects.
- experience from own and corresponding activities.

The RAC for the Stena DrillMAX are consequently established for the following,

- Personnel Risk
- Main safety functions (MSFs)

### 9.1.5.1 Personnel Risk

The acceptance criteria established for personnel risk relate to the following risk indicators, consistent with the existing Stena DrillMAX Safety Case and QRA methodology:

- Fatal Accident Rate (FAR = fatalities per  $10^8$  exposed hours)
- Individual Risk Per Annum (IRPA = risk of death for a person in one year)

The mean individual risk, expressed by the Fatality Accident Rate (FAR), shall meet the following quantitative acceptance criteria, as adopted in the existing Stena DrillMAX QRA framework.

$$\text{FAR} \leq 10$$

FAR is an indication of the individual risks for workers within a particular group. It is the number of fatalities per 108 hours of exposure. FAR is typically in the range of 1-30. Based on the ALARP principle, the tolerability of the acceptance criteria is shown in Figure 9-1.

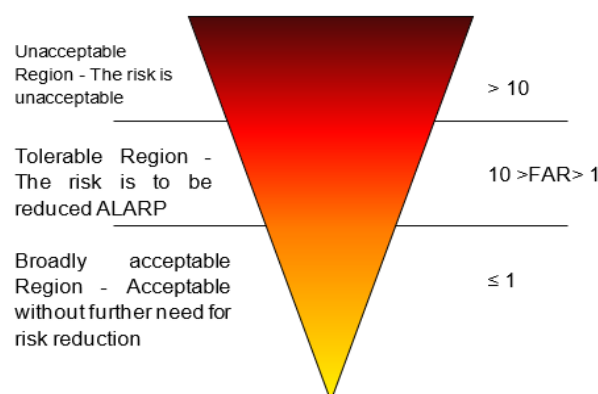


Figure 9-1: Risk criteria for FAR

The Risk Tolerability Criteria (RTC) for the Individual Risk have been adopted from the HEREMA ALARP Guidance, as shown in Table 9-1 below.

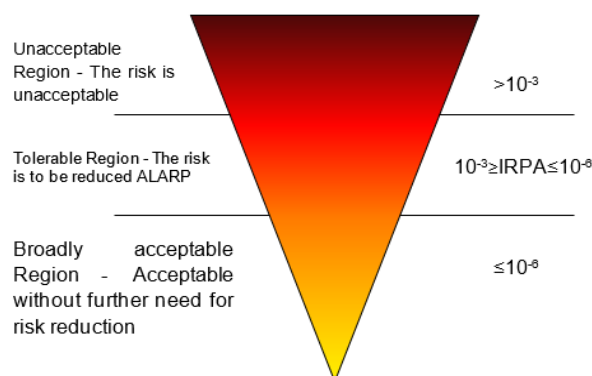
**Table 9-1: Individual Risk Tolerability Limits for Workers**

| TOLERABILITY LIMIT (RISK OF FATALITY PER YEAR) |           |
|------------------------------------------------|-----------|
| Upper                                          | $10^{-3}$ |
| Lower                                          | $10^{-6}$ |

The risk for the most exposed worker group, expressed by the Individual Risk Per Annum (IRPA), shall meet the following quantitative acceptance criteria,

$$\text{IRPA} \leq 1 \times 10^{-3}$$

Based on the ALARP principle, the following assessments are made related to the IRPA values for the worker groups, as shown in Figure 9-2 below.



**Figure 9-2: Risk Criteria for IRPA**

For the FAR and the IRPA criteria, the following main principles apply:

- Personnel exposure applies to the total period of offshore stay.
- Risk by ordinary transportation to/from the facility is included (helicopter).
- Occupational risk is included.
- The criteria apply as the mean for a 12-month period (adjusted for 70 days to represent the duration of the drilling campaign) with the highest risk.
- The mean value is to be calculated for all personnel onboard the drillship and over the entire operating period

The worker groups on the drillship have been categorised as,

- Operational (personnel in hazardous locations such as the drill floor, mud areas, pipe deck, etc.)
- Maintenance (workshop/ deck areas)
- Administrative (personnel mainly in accommodation areas)



### 9.1.5.2 Loss of Main Safety Functions

The main safety functions to be maintained in the event of an accident are as follows,

- **Escape Routes:** At least one escape route from any area outside the area initially exposed where personnel may be located shall be maintained until escape to safe areas on the vessel and evacuation of the vessel has been completed
- **Evacuation Systems:** The evacuation means shall be intact until the evacuation of the vessel has been completed
- **Structural Integrity:** The structural integrity of the primary load-carrying structure shall be maintained until evacuation of the vessel has been completed
- **Temporary Refuge (TR) / Living Quarters (LQ)** (includes the Central Control Room (CCR) on the Bridge and the DP Backup Room).

As per NORSOK Z-013, *"The frequency for impairment of any of the main safety functions shall not exceed 1.0E-04 per year for each accidental load. The total impairment frequency for each safety function, including all accidental loads, shall not exceed 5.0E-04 per year."*

Below these impairment frequencies, the risk shall be reduced in accordance with the ALARP principle. These criteria are applied to this study.

### 9.1.6 Main conclusions

The calculated Individual Risk Per Annum (IRPA) values are:

- Operational worker group      4.50E-05 per year
- Maintenance worker group    4.47E-05 per year
- Accommodation worker group      2.59E-05 per year.

The maximum calculated IRPA is 4.50E-05 per year, which is below the HEREMA upper tolerability limit of 1.0E-03 per year. The individual risk acceptance criterion is therefore satisfied.

The total Potential Loss of Life (PLL) is calculated to be 5.93E-03 fatalities per year. The principal contributors to personnel risk are helicopter transportation, occupational accidents and marine events. Blowouts, well releases, fires, explosions and toxic releases make a comparatively small contribution to the quantified overall risk.

Excluding helicopter transportation, the facility-related Fatal Accident Rate (FAR) is 2.16 fatalities per 10<sup>8</sup> exposed hours, which is below the Stena DrillMAX generic QRA FAR of 2.35 and the project acceptance criterion of 10 fatalities per 10<sup>8</sup> exposed hours. The facility-related FAR acceptance criterion is therefore satisfied.

Helicopter transportation risk has been assessed separately using actual flight-exposure hours, resulting in a FAR of 416 fatalities per 10<sup>8</sup> flight-exposure hours. Because this value is normalised against actual flight hours rather than the total offshore exposure period, it is not directly comparable with the facility-related FAR acceptance criterion. Helicopter transportation risk is included in the IRPA and PLL results.

The personnel-risk results reflect the POB, worker-group distribution, helicopter movements and campaign-duration assumptions adopted in the QRA. These inputs shall be verified against the final campaign manning, and logistics plans before operations commence, and the affected results reviewed if material differences are identified.

The calculated annual Main Safety Function impairment frequencies are:

- Escape routes: 8.99E-06 per year;
- Evacuation systems: 9.00E-06 per year;
- Structural integrity: 8.95E-06 per year; and
- Temporary Refuge: 1.05E-06 per year.

All calculated Main Safety Function impairment frequencies are below the applicable acceptance criteria of 1.0E-04 per year for each individual accidental load and 5.0E-04 per year in total for each safety function.

### **Project Specific Risk Reduction**

For the Asopus-1 campaign, Energean will deploy the K-BOS Emergency Shut-In Device (E-SID) as a pre-positioned subsea shut-in device installed between the wellhead and the Stena DrillMAX BOP stack. The E-SID provides an additional, independently actuated shear-and-seal capability at the wellhead.

The combined BOP and E-SID configuration reduces the estimated probability of an uncontrolled blowout to approximately  $2.08 \times 10^{-8}$  per well. On this basis, a sustained uncontrolled subsea blowout is not adopted as the representative loss-of-containment scenario for the Asopus-1 campaign. Deployment of the pre-positioned E-SID therefore provides a material project-specific risk reduction and supports the demonstration that well-control risks have been reduced to ALARP. This conclusion does not remove the requirement to maintain contingency source-control arrangements, including BOP intervention, well capping, containment and relief-well planning, for emergency preparedness purposes.

Accordingly, the sustained uncontrolled subsea blowout is not adopted as the representative environmental release scenario for the ESIA. The representative scenario is an instantaneous loss of 350 m<sup>3</sup> of Marine Gas Oil from a fuel tank onboard a Platform Supply Vessel supporting the drilling campaign.

Season 1, covering October to March and encompassing the proposed February/March drilling period, provides the primary stochastic risk-envelope basis for the ESIA. Under Season 1 conditions, the highest modelled shoreline-contact probability is associated with Italy, at approximately 5%, with a minimum shoreline-arrival time of approximately 2.8 days. These results represent unmitigated spill behaviour in the absence of oil-spill response measures.

The deterministic simulations were selected from the Season 2 stochastic simulation set and are retained as supplementary sensitivity cases; they are not representative deterministic simulations of the proposed February/March drilling period.

### **Comparative Analysis Results**

The Asopus-1 results have been compared with the existing Stena DrillMAX QRA base case. The comparison indicates:

- an operational IRPA approximately 75% lower than the reference case;
- a PLL approximately 89% lower than the reference case; and

- a Temporary Refuge impairment frequency approximately 84% lower than the reference case.

These differences primarily reflect the reduced operating scope and exposure period of the single-well Asopus-1 campaign. The comparison is therefore a sensitivity assessment rather than a like-for-like comparison between identical drilling programmes. The comparison also reflects the project-specific personnel and exposure assumptions adopted in the QRA.

The QRA/RoMH concludes that the MAHs associated with the Asopus-1 campaign have been identified and assessed. The calculated IRPA, facility-related FAR, and Main Safety Function impairment frequencies meet the applicable risk acceptance criteria. Together with the additional protection provided by the K-BOS E-SID, and subject to implementation and maintenance of the prevention, control and mitigation measures credited in the assessment, the results support the conclusion that the identified major accident risks have been reduced to ALARP.

The following sections present the assessment basis, methodology, results, and supporting information that lead to these conclusions.

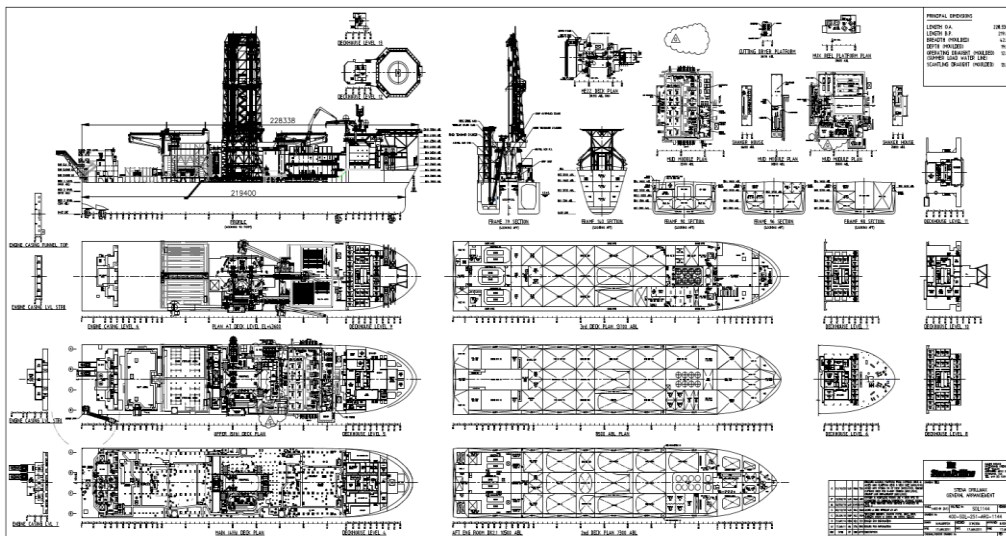
## 9.2 Facilities and operations review

### 9.2.1 Installation description

The MODU to be used for this exploratory drilling is the Stena DrillMAX, a dual-mast, Dynamically Positioned (DP), harsh-environment, ultra-deepwater drillship, designed and certified for year-round worldwide operations. This MODU vessel was built by Samsung Heavy Industries (SHI) and commenced operations in December 2007. The MODU facility layout and General Arrangement drawings are shown in Figure 9-3 and Figure 9-4.



Figure 9-3: MODU Facility Layout



**Figure 9-4: MODU General Arrangement**

The DP Class 3 vessel has a double-hull design. The accommodation unit and helideck are situated at the forward end of the vessel. The dual hoisting towers and enclosed moonpool are situated in the midships section, with the mud processing module forward of the moonpool. The pipe deck is located on top of the mud processing module. Riser storage is to the aft of midships. A stand-building tower is located midship on the starboard side, and stands of drill pipe and casing are racked in a setback area recessed into the hull. X-tree and BOP handling areas are located forward and aft of the moonpool, respectively.

The well test area is situated to the aft of the drillship, between the engine casing and the Riser Storage Bay, is prepared to support a temporary well test package to be provided and operated by a third party. A burner boom is located aft starboard for the disposal of well-test fluids. No well testing is planned as part of the Asopus-1 exploration well programme.

Six engines / generators are arranged in three engine rooms (two engines in each room) located below the main deck aft. Each generator produces up to 7.4 MW of electrical power. The generators are connected to three 11kV switchboards from where power is distributed to all consumers onboard. All six engines are classified as emergency generators. Motive power for the drillship is provided by 6 thrusters, 3 located aft and 3 forward. The vessel is equipped with a Kongsberg Maritime Automation System (IAS), a distributed monitoring and control system built for marine and offshore applications. The IAS covers all important functions onboard, including:

- Power management
- Auxiliary machinery control
- Ballast/bunkering monitoring and control
- Fire and Gas

The IAS operating stations are in the following locations:

- Main Control Room (Forward Bridge) – 4 stations
- Engine Control Room – 2 stations
- Navigation Equipment Room – 1 station

Accommodation for 180 persons is provided in one and two-man cabins. Contained within the accommodation block are the bridge, back-up DP room, meeting rooms, offices, hospital, galley, provisions store, recreation rooms, laundry, and the mess room. The accommodation block is the designated Temporary Refuge. The vessel is equipped with six free-fall lifeboats, two each located forward on the port and starboard sides, and two at the aft end of the vessel. Port and starboard escape tunnels beneath the main deck and primary escape routes on the upper decks lead to the accommodation and lifeboat stations.

## 9.2.2 Facility design and layout

The Stena DrillMAX has been built to Det Norske Veritas (DNV) Rules for the Classification of Offshore Drilling and support units. The full class notation is:

+1A1 Ship-shaped Drilling unit(N), Abate(P), BIS, Crane-offshore, Cyber secure (Essential, +), DRILL (N, MPD), DYNPOS(AUTRO), EO, F(A, M), HELDK(S, H), Recyclable, UKVS

The Stena DrillMAX is registered in Aberdeen, UK

The main dimensions and details of the MODU are shown in Table 9-2 below,

**Table 9-2: Module Main Dimensions Details**

| DIMENSION                         | IMPERIAL      | METRIC          |
|-----------------------------------|---------------|-----------------|
| Length                            | 748.03 ft     | 228.3 m         |
| Breadth mid                       | 137.80 ft     | 42.0 m          |
| Depth mid                         | 62.34 ft      | 19.0 m          |
| Moon pool                         | 84 ft x 41 ft | 25.6 m x 12.5 m |
| Transit draught mid               | 27.88 ft      | 8.5 m           |
| Transit draught (Inc thruster)    | 46.92 ft      | 14.3 m          |
| Operations draught                | 39.37 ft      | 12.0 m          |
| Survival draught                  | 39.27 ft      | 12.0 m          |
| Operations draught (Inc thruster) | 58.39 ft      | 17.80 m         |
| Displacement                      | 105,822 St    | 96,000 mt       |
| Variable Deck Load                | 16,535 St     | 15,000 mt       |
| Transit speed                     | 12.0 kts      | 12.0 kts        |

The storage capacities associated with this MODU are shown in Table 9-3 below,

**Table 9-3: MODU Storage Capacity Details**

| MATERIAL            | CAPACITY (METRIC)     |
|---------------------|-----------------------|
| Fuel oil            | 10,805 m <sup>3</sup> |
| Drill water         | 4,000 m <sup>3</sup>  |
| Potable water       | 2,000 m <sup>3</sup>  |
| Brine               | 500 m <sup>3</sup>    |
| Base oil            | 500 m <sup>3</sup>    |
| Liquid mud (active) | 800 m <sup>3</sup>    |

| MATERIAL              | CAPACITY (METRIC)    |
|-----------------------|----------------------|
| Liquid mud (Storage)  | 2,345 m <sup>3</sup> |
| Bulk Barite/Bentonite | 400 m <sup>3</sup>   |
| Bulk cement           | 400 m <sup>3</sup>   |
| Sack Material         | 7,500 sacks          |

### 9.2.3 Operational modes and activities

The scope of the major accident hazard risk analysis covers all rig areas and operations associated with the Asopus-1 campaign, including:

- Exploration drilling
- Completion activities, not applicable for Asopus-1.
- Helicopter operations
- Marine operations
- Diving operations within the 500m zone, not applicable for Asopus-1.

### 9.2.4 Analytical premises and assumptions

#### 9.2.4.1 Environmental conditions

The vessel is designed for unrestricted worldwide operation.

During drilling operations, the vessel will normally maintain a heading such that the vessel's forward is upwind (approximately  $\pm 20$  degrees).

#### 9.2.4.2 Personnel on Board (PoB)

The assessment is based on the maximum POB of 60 (as per the input from drilling and exploration for the ESIA report), which consist of,

- Operational (drill floor/mud areas/pipe deck) - 25
- Maintenance (workshops/deck areas) - 25
- Accommodation - 10

As mentioned, these inputs shall be verified against the final campaign manning and logistics plans before operations commence, and the affected results reviewed if material differences are identified, as it is possible that total POB can reach up to 180.



## 9.3 Risk assessment methodology

### 9.3.1 Major Accident Hazard (MAH) definition

The concept of a Major Accident Hazard (MAH) adopted for this assessment is consistent with HEREMA guidance and aligned with the approach used in the Stena DrillMAX Safety Case, which was developed in accordance with the UK Offshore Installations (Offshore Safety Directive) Regulations 2015, which notes:

*(a) an event involving a fire, explosion, loss of well control or the release of a dangerous substance causing, or with a significant potential to cause, death or serious personal injury to persons on the installation or engaged in an activity on or in connection with it.*

*(b) an event involving major damage to the structure of the installation or plant affixed to it or any loss in the stability of the installation causing or with a significant potential to cause, death or serious personal injury to persons on the installation or engaged in an activity on or in connection with it*

*(c) the failure of life support systems for diving operations in connection with the installation, the detachment of a diving bell used for such operations or the mapping of a diver in a diving bell or other subsea chamber used for such operations*

*(d) any other event arising from a work activity involving death or serious personal injury to five or more persons on the installation or engaged in an activity on or in connection with it or*

*(e) any major environmental incident resulting from any event referred to in paragraph (a), (b) or (d)*

The definition of 'major accident' lists types of events involving, or with the potential for, serious injury or loss of life. In compliance with the relevant HEREMA guidance, all the following have been covered in this assessment,

- All credible hazards with the potential to cause a major accident as defined have been identified.
- The risks have been evaluated.
- Measures taken to control those risks to ensure compliance with the statutory provisions.

### 9.3.2 Risk Assessment process

The key activities carried out in the risk assessment process are as follows,

- Identification of events developing Major Accident Hazards (MAH).
- Assessing the frequency or likelihood of the MAHs, based on the identified events.
- Assessing the consequences of the MAHs related to people and the surrounding environment.
- Combining the MAH's frequencies and consequences to find the numerical levels of risk.
- Assessing the calculated risk level against the risk tolerability criteria
- Develop the required risk management strategies based on the calculated risk level.

### 9.3.3 Hazard identification methodology

Identifying potential hazards on the MODU during drilling operations evolved based on the concept, design, and construction phases of the DrillMAX. A systematic review was carried out by Stena Drilling Limited (SDL) during each phase by a multi-disciplinary brainstorming team with relevant knowledge, experience, and qualifications. The Stena DrillMAX team identified the complete range of major hazards associated with the drillship and its operations. Hence, the Hazard Register developed by SDL for the DrillMAX MODU, together with risk categorisation for personnel and the environment, has been used as the basis for identifying the hazards applicable to the Asopus-1 project.

The identified MAHs are listed below:

1. Blowout and Well Releases
2. Fire, Explosion related to Well Operations
3. Release of Toxic or Other Hazardous Material
4. Fire and Explosion in Other Areas
5. Pressure Vessel Failure
6. Marine Accidents
7. Dropped Objects
8. Helicopter Accident
9. Spills to Sea

### 9.3.4 Risk classification methodology

The SDL Risk Classification Matrix was used for the initial screening of hazards and qualitative assessment of risks. The Risk Classification Matrix used in this assessment is shown in Figure 9-5 below.

|   | Consequences                        |                                                    |                                                            |                        |                                  | Likelihood                      |                           |                              |                                              |                                                      |
|---|-------------------------------------|----------------------------------------------------|------------------------------------------------------------|------------------------|----------------------------------|---------------------------------|---------------------------|------------------------------|----------------------------------------------|------------------------------------------------------|
|   | Personnel                           | Environment                                        | Barrier Degradation                                        | Asset Damage /Downtime | Reputation                       | A<br>Never heard of in industry | B<br>Heard of in industry | C<br>Has occurred in Company | D<br>Several occurrences per year in Company | E<br>Several occurrences per year on location or rig |
| 1 | Minor injury<br>FAC                 | Very limited impact<br>< 10 m3                     | No impact on function or reliability/availability          | < 100K USD             | Negligible impact                | Low                             | Low                       | Low                          | Medium                                       | Medium                                               |
| 2 | Moderate injury<br>MTO or RWC       | Minor short term impact<br>10 - 100 m3             | Minor impact on function or reliability/availability       | 100K – 500K USD        | Short term local impact          | Low                             | Low                       | Medium                       | Medium                                       | High                                                 |
| 3 | Serious injury<br>LTI               | Moderate short/medium term impact<br>100 - 1000 m3 | Moderate impact on function or reliability/availability    | 500K – 5M USD          | Medium to long term local impact | Medium                          | Medium                    | High                         | High                                         | Serious                                              |
| 4 | Single fatality or severe injury    | Long term localised impact<br>1000 – 10,000m3      | Significant impact on function or reliability/availability | 5M – 25M USD           | National concern                 | Medium                          | High                      | High                         | Serious                                      | Serious                                              |
| 5 | Multiple fatalities/severe injuries | Widespread long term impact<br>> 10,000 m3         | Barrier function lost                                      | > 25M USD              | International concern            | High                            | Serious                   | Serious                      | Serious                                      | Serious                                              |

**Figure 9-5: SDL Risk Classification Matrix**

### 9.3.5 Safety and Environmentally Critical Elements (SECE) identification

A fundamental aspect of risk identification and evaluation is the identification of critical barriers: the failure of which could cause or contribute substantially to a major accident, or whose purpose is to prevent or limit the effect of a major accident. These barriers are referred to as safety and environmental critical elements (SECEs). The SECEs associated with the MODU are provided by Stena Drilling and listed below,

**Table 9-4: Safety and Environmentally Critical Elements (SECE)**

| ID | SECE                       | ID | SECE                               |
|----|----------------------------|----|------------------------------------|
| 01 | Vessel Structure           | 23 | Primary Well Control               |
| 02 | Stability                  | 24 | Secondary Well Control             |
| 03 | Ballast System             | 25 | Well Monitoring                    |
| 04 | Bilge System               | 26 | Marine Riser                       |
| 05 | Watertight Closures        | 27 | Hoisting Mast                      |
| 06 | Positioning System         | 28 | Main & Emergency Power             |
| 07 | Collision Avoidance        | 29 | Integrated Automation System (IAS) |
| 08 | Ignition Prevention        | 31 | UPS                                |
| 09 | Fire Detection             | 32 | Pedestal Crane                     |
| 10 | Gas Detection              | 33 | HVAC                               |
| 11 | Fixed Firefighting         | 34 | Internal Communications            |
| 12 | Firewater, Foam            | 35 | External Communications            |
| 13 | Passive Fire Protection    | 36 | Hazardous Drains                   |
| 14 | Emergency Shutdown         | 37 | Temporary Equipment                |
| 15 | Temporary Refuge           | 38 | Well Test Equipment                |
| 16 | Escape Routes              | 39 | Managed Pressure Drilling (MPD)    |
| 17 | Emergency & Escape         | 40 | High Pressure High Temperature     |
| 18 | Helideck                   | 41 | Cyber Security                     |
| 19 | TEMPSC                     |    |                                    |
| 20 | Life rafts                 |    |                                    |
| 21 | Lifesaving Equipment & PPE |    |                                    |
| 22 | Standby Vessel             |    |                                    |

### 9.3.5.1 SECE Performance Standards

Based on the list of SECEs detailed in Table 9-4 above, suitable functional requirements have been developed to assist in effective management and maintenance of the systems. These requirements are called Performance Standards (PS).

The minimum standards that SECEs are required to maintain to achieve the specified safety goal are defined in the PS. The standards define the SECE functionality, as well as qualitative and quantitative performance criteria for each SECE. A Verification Scheme has been developed by SDL to ensure independent verification that the SECEs meet their performance standards throughout their life cycle.

Performance standards are established for SECEs in terms of:

- **Functionality:** A statement of the performance required of the SECE to fulfil its role
- **Availability:** A statement of the required availability of the SECE
- **Reliability:** For some active systems, the minimum required reliability is stipulated
- **Survivability:** The required performance of the system following an emergency
- **Interactions:** The identification of the dependency of the SECE on the operation of other SECEs

### 9.3.5.2 SECE Assurance

A risk-based, results-oriented maintenance system for the DrillMAX is in place, reflecting good industry practice and focusing on ensuring the performance of SECEs. A holistic management approach is taken to ensure that internal QA/QC, planned maintenance, and the holding of essential spares onboard for the SECEs are targeted at reducing the risks to personnel and the environment to a level as low as reasonably practicable.

The primary goals of the maintenance system are,

- The DrillMAX shall be operated and maintained in a manner that reduces all risk related to HSE to a level as low as reasonably practicable.
- The maintenance activities shall contribute to an early identification of critical failures and optimised availability of critical vessel systems and equipment.

The DrillMAX maintenance system is based on the maintenance management loop illustrated in Figure 9-6, which identifies the key elements of a risk-based continuous improvement system.

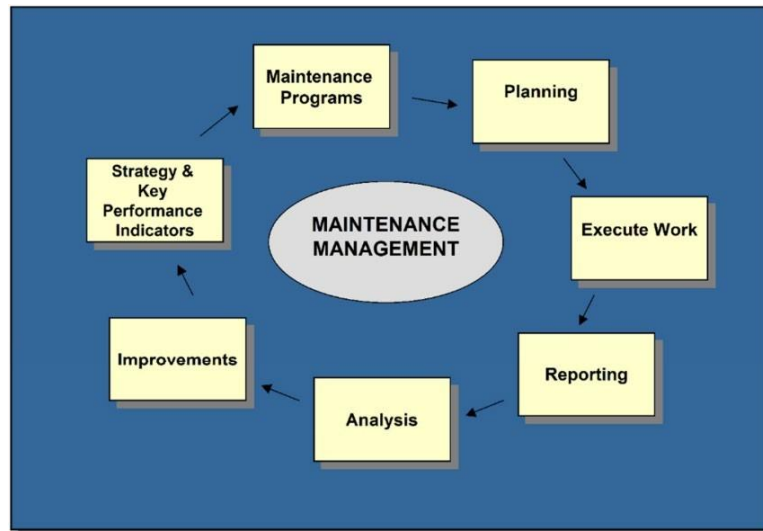


Figure 9-6: Stena DrillMAX Maintenance Management Loop

## 9.4 Hazards identification

### 9.4.1 Hazards identification

The hazards identified and assessed from the existing DrillMAX QRA, based on the Asopus-1 project activities, are listed below,

- Blowouts (during drilling)
- Fires, Explosions and Toxic Releases
- Marine Events
- Other Hazards

The following scenarios have been identified and assessed from report as below,

#### Blowouts

- Well releases located on the drill floor
- Blowouts located on the drill floor
- Blowouts located in the moonpool
- Blowouts located in the mud processing room
- Blowouts located subsea

#### Fires, Explosions and Toxic Releases

- Fire in mud treatment areas
- Release of toxic gas( $H_2S$ )
- Fire in accommodation
- Machinery space fires

#### Marine Events

- Ship collision
- Passing vessel collision
- Attendant vessel collision
- Structural failure
- Reduction in stability
- Loss of dynamic positioning system

#### Other Hazards

- Dropped Objects
- Occupational risks
- Transport – Helicopter accidents
- Helicopter crash on the MODU

### 9.4.2 Identification of major accident scenarios

The MAH's identified from the existing Hazard Register and used in the QRA assessment are listed in **Table 9-5**.

**Table 9-5: Assessed Major Accident Hazards**

| ACCIDENTAL EVENT                                       |                                                                             | RISK TO PERSONNEL | RISK TO ENVIRONMENT | MAH | MEI | NON-MAH |
|--------------------------------------------------------|-----------------------------------------------------------------------------|-------------------|---------------------|-----|-----|---------|
| <b>1. Blowout and Well Releases</b>                    |                                                                             |                   |                     |     |     |         |
| 1.1                                                    | Well release                                                                | H                 | M                   | X   |     |         |
| 1.2                                                    | Blowout topsides                                                            | S                 | S                   | X   | X   |         |
| 1.3                                                    | Subsea blowout                                                              | S                 | S                   | X   | X   |         |
| 1.4                                                    | Shallow gas blowout                                                         | S                 | L                   | X   |     |         |
| <b>2. Fire, explosions related to well operations</b>  |                                                                             |                   |                     |     |     |         |
| 2.1                                                    | Fire in mud treatment areas (mud pits, shale shaker room and mud pump room) | S                 | L                   | X   |     |         |
| 2.3                                                    | Fire or explosion in well test area                                         | S                 | H                   | X   | X   |         |
| 2.4                                                    | Explosives incident                                                         | H                 | n/a                 |     |     | X       |
| <b>3. Release of toxic or other hazardous material</b> |                                                                             |                   |                     |     |     |         |
| 3.1                                                    | H <sub>2</sub> S release (blowout or well testing)                          | S                 | n/a                 | X   |     |         |
| 3.2                                                    | Toxic gas/unbreathable atmosphere in confined spaces                        | S                 | n/a                 |     |     | X       |
| 3.3                                                    | Inadvertent release of CO <sub>2</sub> fixed firefighting system            | S                 | L                   |     |     | X       |
| <b>4. Fire and Explosion in Other Areas</b>            |                                                                             |                   |                     |     |     |         |
| 4.1                                                    | Fire in main engine room                                                    | S                 | n/a                 | X   |     |         |
| 4.2                                                    | Fire or explosions in purifier room                                         | S                 | n/a                 |     |     | X       |



| ACCIDENTAL EVENT                  |                                                                                                                 | RISK TO PERSONNEL | RISK TO ENVIRONMENT | MAH | MEI | NON-MAH |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------|-------------------|---------------------|-----|-----|---------|
| 4.3                               | Fire or explosions in HPU                                                                                       | H                 | n/a                 |     |     | X       |
| 4.4                               | Machinery space fires – ballast pump room                                                                       | M                 | n/a                 |     |     | X       |
| 4.5                               | Machinery space fires – thruster space                                                                          | M                 | n/a                 |     |     | X       |
| 4.6                               | Machinery space fires – APV/compressor room                                                                     | M                 | n/a                 |     |     | X       |
| 4.7                               | Fire in switch/transformer, local equipment rooms                                                               | M                 | n/a                 |     |     | X       |
| 4.8                               | Explosion/fire in oxy-acetylene storage area                                                                    | H                 | n/a                 |     |     | X       |
| 4.9                               | Fire in chemical storage areas                                                                                  | M                 | n/a                 |     |     | X       |
| 4.10                              | Fire in paint store                                                                                             | L                 | n/a                 |     |     | X       |
| 4.11                              | Methanol fire                                                                                                   | M                 | n/a                 |     |     | X       |
| 4.12                              | Fire in helifuel storage area                                                                                   | M                 | M                   |     |     | X       |
| 4.13                              | Fire in accommodation                                                                                           | S                 | n/a                 | X   |     |         |
| <b>5. Pressure Vessel Failure</b> |                                                                                                                 |                   |                     |     |     |         |
| 5.1                               | Pressure vessel failure: APVs                                                                                   | H                 | n/a                 |     |     | X       |
| 5.2                               | Pressure failure nitrogen bottles                                                                               | H                 | n/a                 |     |     | X       |
| 5.3                               | Pressure vessel failure: bulk tanks                                                                             | H                 | n/a                 |     |     | X       |
| 5.4                               | Pressure vessel failure: boilers                                                                                | H                 | n/a                 |     |     | X       |
| 5.5                               | Pressure vessel failure: starting air                                                                           | M                 | n/a                 |     |     | X       |
| <b>6. Marine Accidents</b>        |                                                                                                                 |                   |                     |     |     |         |
| 6.1                               | Passing vessel collision (i.e. errant merchant vessel, drifting vessel, fishing vessel, submarines, etc.)       | S                 | H                   | X   |     |         |
| 6.2                               | Attendant vessel collision (i.e. supply boat, emergency response and rescue vessel)                             | M                 | L                   | X   |     |         |
| 6.3                               | Iceberg collision                                                                                               | S                 | H                   | X   |     |         |
| 6.4                               | Structural failure due to fatigue, corrosion or extreme environmental loading, etc., leading to loss of vessel. | S                 | H                   | X   |     |         |
| 6.5                               | Failure of dynamic positioning system.                                                                          | S                 | n/a                 | X   |     |         |
| 6.6                               | Loss of stability                                                                                               | S                 | H                   | X   |     |         |
| 6.7                               | Flooding of setback area                                                                                        | L                 | n/a                 |     |     | X       |
| 6.8                               | Man overboard                                                                                                   | H                 | n/a                 |     |     | X       |
| <b>7. Dropped objects</b>         |                                                                                                                 |                   |                     |     |     |         |
| 7.1                               | Dropped object from main cranes                                                                                 | H                 | n/a                 | X   |     |         |
| 7.2                               | Dropped objects from the accommodation service crane                                                            | H                 | n/a                 | X   |     |         |
| 7.3                               | Dropped tubulars from pipe handling cranes                                                                      | H                 | n/a                 |     |     | X       |
| 7.4                               | Dropped objects from riser gantry crane                                                                         | H                 | n/a                 |     |     | X       |

| ACCIDENTAL EVENT              |                                                      | RISK TO PERSONNEL | RISK TO ENVIRONMENT | MAH | MEI | NON-MAH |
|-------------------------------|------------------------------------------------------|-------------------|---------------------|-----|-----|---------|
| 7.5                           | Dropped objects from BOP overhead crane              | H                 | n/a                 |     |     | X       |
| 7.6                           | Dropped objects from xmas tree handling crane        | H                 | n/a                 |     |     | X       |
| 7.7                           | Dropped objects from SBOP crane                      | H                 | n/a                 |     |     | X       |
| 7.8                           | Dropped objects in the mast                          | H                 | n/a                 |     |     | X       |
| <b>8. Helicopter Accident</b> |                                                      |                   |                     |     |     |         |
| 8.1                           | Helicopter incident on or adjacent to the vessel     | S                 | L                   | X   |     |         |
| 8.2                           | Helicopter incident during travel to and from vessel | S                 | L                   | X   |     |         |
| <b>9. Spills to Sea</b>       |                                                      |                   |                     |     |     |         |
| 9.1                           | Release of diesel during bunkering operations        | L                 | L                   |     |     | X       |
| 9.2                           | Rupture of helifuel tank                             | L                 | L                   |     |     | X       |
| 9.3                           | Liquid drop out during flaring operations            | L                 | L                   |     |     | X       |

Legend:

|         |            |          |             |
|---------|------------|----------|-------------|
| L (Low) | M (Medium) | H (High) | S (Serious) |
|---------|------------|----------|-------------|

### 9.4.3 Hydrocarbon release scenarios

#### 9.4.3.1 Blowouts and well releases

A blowout is defined as an uncontrolled release of fluid from a well. The most significant hazard associated with these releases is the uncontrolled release of hydrocarbons to the surface. Drilling mud, completion fluid, or water may also be blown out in the process.

Analysis of blowout risks is important because they have the potential to release large amounts of hydrocarbons, are difficult to control, could inflict significant damage to the drillship and the environment, and pose a major threat to personnel.

The blowouts risk evaluation consists of the following:

- Hazard identification
- Blowout frequency estimation
- Consequence evaluation
- Risk summation
- Risk reduction measures

#### Hazard Identification

Well control systems are designed to prevent uncontrolled flow of releases of formation fluids from the well. Normally, three levels of well control procedures are distinguished as follows:

1. Primary well control systems are designed to prevent uncontrolled flow of formation fluids from the formation by maintaining hydrostatic pressure with drilling mud and MPD backpressure, if applicable.
2. Secondary well control systems are established to control the well in the event of an unscheduled flow and primary control failure. Control of the well at this level normally requires the use of the blowout preventer (BOP).
3. Tertiary well control systems can be implemented to prevent loss of control when secondary procedures fail. This could involve an independent shut-in device or other methods that involve pumping, such as barite, gunk, or cement plugs.

In the unlikely event these three layers fail to regain control of the well, a blowout may result. The scenarios which have been identified during the operation of the MODU are as follows,

- Hydrocarbon blowouts located on the drill floor.
- Hydrocarbon blowouts located in the moonpool.
- Hydrocarbon blowouts located in the mud processing room (shale shakers).
- Hydrocarbon blowouts located subsea.
- Shallow gas blowouts.

In addition to the fire and explosion hazards posed by blowouts, toxic gas (H<sub>2</sub>S) may be present in harmful concentrations within the reservoir or formation being drilled. When released on or near the drillship, toxic gas may constitute a major accident event. Toxic gas released on the MODU would normally be coincident only with a well control problem.

However, H<sub>2</sub>S may also occur in the shaker area where the mud is first exposed to the atmosphere. For the drillship, H<sub>2</sub>S detectors are installed in areas where H<sub>2</sub>S may occur during normal operations. If operations are planned in areas with a known or potential H<sub>2</sub>S hazard, the drilling Contractor SDL shall take special precautions when preparing and carrying out the drilling operations.

Shallow gas releases are assumed to occur subsea, consistent with the existing QRA. At the Asopus-1 water depth of approximately 840 m, a substantial proportion of released gas is expected to dissolve in the water column, while any gas reaching the surface is expected to disperse over a broad area. On this basis, shallow gas releases are assessed as presenting a low risk to personnel and the MODU at the sea surface.

#### 9.4.3.2 Fires, explosions and toxic releases

##### Fire in mud treatment areas

The mud system on the MODU treats, stores, and circulates the drilling fluid required for all planned and emergency operations.

The three main mud treatment areas are as follows:

- Mud pits.

- Shale shaker room (mud process area).
- Mud pump room.

The mud pits and shale shaker room are mechanically ventilated with under-pressure in relation to non-hazardous and Zone 2 areas.

The possible causes of explosions in the mud treatment areas include gas buildup from

- High concentration or large quantity of gas returned while circulating out a kick.
- Inadequate ventilation system, resulting in it being impossible to prevent gas buildup from the gas-cut mud.

### **Release of Toxic Gas (H<sub>2</sub>S)**

The storage and use of hazardous or potentially toxic materials kept onboard is strictly controlled by MODU procedures. This risk assessment has not considered the risks due to the release of such materials.

Toxic gas (H<sub>2</sub>S) may exist naturally in the reservoir. Significant quantities of H<sub>2</sub>S could be released in an unlikely scenario of a well control event, including while circulating out a kick or during a blowout. No well testing is planned as part of the Asopus-1 campaign.

H<sub>2</sub>S may also become entrained in the drilling mud and be brought onboard with the mud returns. Small toxic gas releases resulting from normal or primary well control operations or from core breakout are controlled by standard contingency procedures.

### **Other Fires**

Other fire events include all fires and explosions not related to well operations. Such fires/explosions may involve hydrocarbons (typically helifuel, diesel, lube oil, etc.) or be non-hydrocarbon fires (e.g., accommodation, electrical, or chemical fires).

Although most of these fires are limited both in size and duration (e.g. a chip-pan fire in the galley lasting a few seconds), some recorded events have been larger causing severe damage and fatalities. The frequency of these fires may be higher than that of fires related to well operations, suggesting they should not be overlooked when establishing the overall risk picture, even though the consequences are likely to be smaller.

The other identified hazards are as follows:

- Fire in accommodation
- Fire in main engine rooms

### **Fire in Accommodation (Living Quarter / Temporary Refuge)**

The accommodation on the drillship has capacity for 180 persons. Based on historical evidence, the following areas are the most likely sources of accommodation fires.

Galley Fire - Cooking presents a potential fire hazard. A galley fire could destroy the galley and possibly smoke-log the accommodation; however, fire spread is unlikely, and it is considered that there is minimal potential for galley fires to develop into major accidents.

Laundry Fire - Drying overalls with residual oil traces present a fire risk, as does the accumulation of lint in the dryer exhausts. A laundry fire is unlikely to spread beyond the compartment since the combustible

inventory is limited and the construction is fire-rated; however, the accommodation could become smoke-logged.

On the drillship, the main control room is located above the accommodation block. In the event of an escalated accommodation fire, the integrity of the control room could be compromised, leading to control room impairment.

### Fire in Main Engine Room

There are three main engine rooms located at the aft of the vessel. Each room contains 2 diesel generators. The exhaust ducts from the engines are routed up and above the upper deck level. The engine rooms are protected by gas, smoke and flame detection, a fire alarm push-button, a fixed CO<sub>2</sub> extinguishing system, portable firefighting equipment, and fire hose stations.

A fire in one of the main engine rooms could involve a potentially large volume of fuel oil. Engine room fires may begin with a fractured fuel line or a fuel leak that comes into contact with a hot surface, such as an exhaust manifold. Oily rags left close to or in contact with hot machinery surfaces and welding work can also initiate small fires in machinery spaces. Fuel-oil cut-off valves are provided and can be remotely operated from outside the main engine rooms.

## 9.4.4 Non-Hydrocarbon release scenarios

### 9.4.4.1 Marine events

#### 9.4.4.1.1 Ships collision

During normal offshore operations, the MODU will be exposed to collision risks from marine vessels. These vessels include passing merchant vessels, fishing vessels in transit and supply vessels destined for the drillship location.

The risk from drifting vessels is considered low as the time between detection and a potential collision with the drillship should be more than adequate to allow for an organised relocation or evacuation of the drillship.

The results presented are based on the implementation of operational procedures to detect errant vessels and initiate measures to prevent collisions.

The MODU is assumed to operate with a nearby support vessel and an Automatic Radar Plotting Aid (ARPA), and the drillship is required to disconnect and move off if required. It is taken into consideration that procedures will focus on ensuring that the disconnection of the riser is initiated early enough to allow the drillship to move out of the errant vessel's path.

For the MODU, there are two primary ways of avoiding collision once a threat has been confirmed through the use of the ARPA (or via visual observation).

- Warning the vessel causing a threat, using available means of communication.
- Disconnecting and moving the drillship to a safe location.

For the drillship's ARPA to be effective in preventing collisions, the drillship's onboard communication systems must be used to contact ships that pose a risk to the drillship. Action must then be taken on the approaching vessel in order to avoid collision. The nearby support vessel can also be used to avert a collision by turning towards the approaching vessel and using sound and light signals. However, for the approaching vessel to respond to radio calls, sound, or light signals, the bridge must be manned, and the vessel's personnel must be able to carry out appropriate corrective actions. In the event efforts to establish radio contact with the approaching vessel fail, collisions can be avoided by moving the drillship.

#### 9.4.4.1.2 Structural failure

Factors which may influence or accelerate the structural failure of the drillship include,

- Weakness in structure (e.g. design defect, inadequate design, material or fabrication defect, failure due to incorrect modification, or inadequate maintenance, inspection, and testing).
- Overloading of the structure due to human error or extreme weather.
- Consequences of fires, explosions, reduction of stability, impact (ship collision, helicopter crash, grounding).

Structural failure due to fatigue, corrosion, or extreme environmental loading (Earthquakes, Extreme weather, etc.) may lead to a major accident, either through compartment flooding that reduces stability or through loss of structural strength that causes progressive collapse.

Earthquakes are not considered to have a significant direct influence on the MODU. However, the wellhead / BOP may be exposed to excessive loads. If the drillship is to be operated in areas where there is a significant risk of an earthquake, precautions should be considered for the specialised design of the casing, wellhead, BOP, and connectors, as well as operational procedures.

Some analyses have drawn a distinction between failures in environmental conditions beyond those the installation was designed to withstand (extreme weather) and other failures under less severe conditions that reveal design or construction errors (failures within design). This distinction is not always clear, so the two types of failures are treated together in this report.

#### 9.4.4.1.3 Reduction in stability

A reduction in stability may be caused by flooding following a vessel collision, by structural failure, or by extreme environmental conditions, which are initiated by many of the events that cause critical structural failure identified above. A reduction in stability may lead to vessel capsize, with potential material and environmental consequences.

NORSOK N-003. states that *“for floating structures it should be considered whether a subsea gas blowout can cause loss of buoyancy or a displacement of significance to the stability.”* For a DP/unmoored vessel in water depths of at least 250m (minimum operating water depth for the drillship), the probability of loss of buoyancy or a displacement of significance to the stability is considered to be low as the dynamic forces of a rising gas plume would tend to push the vessel away from the centre of the plume and away from the least buoyant areas. Hence, this scenario is not considered an accidental dimensioning event.



In other events where the vessel suffers a loss of stability, the event may escalate more slowly, allowing personnel time to muster and evacuate the vessel by TEMPSC.

During analysis of the vessel design, the recessed setback area next to the drill floor was identified as potentially prone to flooding under extreme environmental conditions, which could reduce stability.

#### 9.4.4.1.4 Loss of position

Loss of position occurs when the drillship unintentionally moves off. This may be due to a thruster failure, a loss of power, a computer software malfunction, or a reference system failure.

While it is expected that, during drilling operation, provisions would be made for possible deviations from the specified location beyond the operationally tolerable limit, excursions beyond these limits, known as force-off, drift-off or drive-off, could still occur. When operating in DP mode, loss of position is described as drift-off, drive-off, large excursion, or force-off.

The DP control system of the drillship is designed to comply with DNV Class Notation DNV DYNPOS AUTRO (IMO DP Class 3). Thus, meeting the requirement that propulsion and control systems shall be fully redundant so that no single failure can put out both systems

The main contributors to risk from loss of station keeping ability have been identified as:

- Large excursions
- Drift-off
- Drive-off

Each of the above events is discussed in more detail below.

##### Large Excursions

Large excursions imply that the drillship deviates from the specified location by more than what is operationally tolerable. Large excursions are not considered a loss-of-position hazard, as any consequences are purely operational in nature.

##### Drift-off

Drift-off is caused by loss of power from the thrusters, and the behaviour of the drillship will depend upon wind conditions, sea state and current. As a standard, the Stena DrillMAX is expected to operate within the designed environmental limits. Where adverse weather conditions are not foreseen, appropriate measures should be in place to prevent or mitigate any major accident event.

##### Drive-off

A drive-off situation is taken to be a loss of position event due to either:

- A fault in the thrusters and/or their control system.
- A fault in the position reference system

The hazards associated with thruster control could be as follows,

- The MODU drillship has deviated from the reference point, and power in the direction of the reference point is given to the thrusters. The MODU drillship moves towards the reference point.

- The DP control system initiates a command to change the power to the thrusters to stop the drillship at the reference point. The system suffers an on-demand failure and does not respond.
- The drillship overshoots the reference point, and the DP control may increase the power to bring the drillship back to the reference point. The drillship, however, accelerates away from the reference point.
- If the operator does not intervene, the drillship will suffer a critical loss of position.

A drive-off could occur if the DP system, for some reason, obtains an incorrect position reference. The drillship may then move towards the new, wrong reference point.

In the list of potential causes for drive-off, operator error is not included. This is because the drillship is assumed to use automatic mode only either during normal operation or in situations which are difficult to control. Manual mode can be achieved by pressing several buttons to disable automatic mode (i.e., manual mode is not obtained by moving the joystick alone). Using manual mode will introduce more complex error mechanisms, increasing the probability of position loss.

#### 9.4.4.2 Other hazards

##### 9.4.4.2.1 Topsides Dropped objects

Accidentally dropped loads from cranes, drill tower or other lifting devices could result in injuries or fatalities to personnel, release of hazardous material (if the object falls on deck or in the seabed) or damage to the structural support. This risk contribution is usually included in the occupational risk figure. The occupational risk contribution has been removed to avoid double-counting.

The MODU drillship is equipped with three 85 te deck cranes (1 port and 2 starboard). In addition, there is a 7 te pipe-handling knuckle boom crane forward, and dedicated pipe-handling equipment both forward and aft of the drill tower.

The main risk contribution from dropped objects on an offshore installation is typically considered to be the risk of dropped objects striking personnel directly or impacting hydrocarbon-containing equipment (thus initiating leaks, fires, or explosions). Dropped objects may also impact or puncture critical equipment or structural elements. However, there are limited topsides inventories on the MODU drillship; the probability of these events resulting in the impairment of safety function or the need for evacuation is considered to be low. The most likely scenario is damage to the asset, which in most cases may not be significant.

The critical areas identified in the MODU drillship are as follows,

- Accommodation, wheelhouse, control room, and backup DP room.
- Switch / transformer room above the mud pits / mud pumps.
- Setback area.
- Cargo oil storage tanks (protection provided by plated deck above).
- Well test area when in use.
- Engine rooms and engine control room.
- Helifuel storage tanks.

It is assumed that dropped object protection / crane coverage area for the wheelhouse, control room and the backup DP room is in place, and that the helifuel storage tanks will be suitably protected. Further, it is assumed that Stena lifting procedures are in accordance with industry good practice and that there is no lifting over live hydrocarbon-containing equipment.

Hence, the risk contribution from impacts with hydrocarbon-containing equipment resulting in leaks or fires can be considered negligible, and the greatest risk to personnel is being hit, struck, or crushed by a falling or swinging object. Risks due to dropped objects are therefore restricted to direct impact with personnel i.e. falling or striking.

#### 9.4.4.2.2 Subsea Dropped objects

Most MAHs related to dropped objects refer to drillship-dropped objects impacting subsea infrastructure. The exact nature of the subsea infrastructure will change on a well-by-well basis, and meaningful quantification of the annualised risk is not feasible.

As the MODU will be operating in deep water where there is no nearby seabed infrastructure, the likelihood of a dropped object impacting a piece of equipment directly below the vessel is negligible. Any hydrocarbon release following impact on subsea infrastructure will disperse in the water column. Ignition is deemed unlikely as the gas concentration on the deck of the vessel will be below the flammability threshold. The gas column in the water will not displace sufficient water to cause stability issues with the vessel.

#### 9.4.4.2.3 Helicopter Transport (travel accidents)

The helicopter risk to the different personnel groups on the drillship can be assessed using a risk model, taking into account the number of flight stages and takeoffs and landings. Combining this with historical data on accident frequencies at each stage, the risk of helicopter travel is calculated.

The risks have been split into those during the in-flight stage (in the air) and during take-off/landing, with a crash on the installation.

Due to the transient nature of the vessel location, the flight time will change depending on the distance to the onshore heliport. Based on project information, the base-case helicopter flight time is assumed to be 1 hour (30 min each way). Fixed-wing transportation is excluded from this assessment.

##### Helicopter Crash on the Drillship

The risks to personnel on the helicopter resulting from helicopter crashes on the drillship are included in the helicopter transport risk above. However, helicopter accidents on offshore helidecks may affect personnel not inside the helicopter.

Possible scenarios with respect to helicopter crashes are:

- Heavy landing or crash onto the helideck, with potential for a subsequent fire;
- Crash into the control room or bridge due to overshooting the helideck, with potential for impairment of the upper TR due to the resulting fire;
- Crash into the sea; or

- Crash into other areas of the drillship

#### 9.4.4.2.4 Occupational hazards

Occupational accidents are defined as accidents with no potential to cause fatalities outside the immediate area of the incident. Most cases will cause no more than a single fatality.

Occupational accidents include a wide variety of events, such as:

- Falls (to the same level, to a lower level, to the sea).
- Mechanical impacts.
- Burns (e.g. from hot surfaces, open flames from hot work).
- Poisoning, suffocation, asphyxiation.
- Damage caused by tools and machinery.

## 9.5 Frequency Assessment –based on QRA

### 9.5.1 Hydrocarbon release frequencies

#### 9.5.1.1 Topsides blowouts

The base case assumption and sensitivity cases used in the DrillMAX QRA are as follows,

- Base case: 4 HP/HT exploration wells (per year) in the Gulf of America
- Sensitivity case 1: 3 HP/HT development wells and 3 completion operations per year in the Gulf of America
- Sensitivity case 2: 4 HP/HT exploration wells (per year) in the Northwest Atlantic (off the coast of Newfoundland, Canada), and
- Sensitivity case 3: 3 HP/HT development wells and 3 completion operations per year in the Northwest Atlantic (off the coast of Newfoundland, Canada).

For Asopus-1, the plan is to drill only one (1) exploration well. with no well completions and/ or production of hydrocarbons. This assessment uses analysis from only the base case.

The SINTEF offshore blowout database is the primary source of the data used to establish the blowout frequencies for the MODU Stena DrillMAX. The database, updated annually in the SINTEF blowout frequencies report and analysed by Vysus, is considered the most comprehensive and applicable for global operational risk analyses.

The blowout frequencies for the different operational phases of drilling are given in the SINTEF and Vysus reports and are based on operational experience in the US Gulf of America (GOA), the UK, and Norway. A key improvement in this risk assessment is the use of the latest SINTEF and Vysus reports, which contain the most up-to-date frequency data. The data covers the period 1 Jan 1980 to 31 Dec 2022. Blowout statistics from other regions of the world have been excluded from the frequency estimate due to low data quality and

operational standards and practices considered inferior to those in the US Gulf of America (GOA), the UK, and Norway.

To reflect possible changes in frequencies over time, Vysus applies an approach in which new data is given greater weight than old data. This approach consists of a linear weighting of incidents and exposure times from 1980 to 2013. In this manner, data from the last 10 years are treated equally, whereas older data are gradually weighted towards lower significance. Technological and safety standards have considerably improved over time, and the implementation of new safety regulations has changed how drilling operations are planned and carried out.

The frequencies and consequence modelling from the existing Stena DrillMAX QRA base case have been retained for this assessment as a conservative basis. The DrillMAX base case assumes an HPHT exploration well, whereas Asopus-1 is currently expected to encounter normal reservoir pressures and temperatures, with formation pressure limited to hydrocarbon buoyancy. Accordingly, the use of the DrillMAX base case is considered conservative for the purposes of this assessment.

The blowout frequencies and consequence assumptions from the existing Stena DrillMAX QRA have been retained as the conservative basis for the personnel-risk calculations. No quantitative credit has been taken in the reported IRPA, FAR, PLL or Main Safety Function impairment results for the lower expected Asopus-1 reservoir conditions or for the additional risk reduction provided by the project-specific E-SID.

The blowout frequency for the exploration drilling well, based on analysis of the SINTEF database as published in the SINTEF and Vysus report, is used in Table 9-6 below,

**Table 9-6: Blowout Frequency for Exploration Drilling Well Operation**

| OPERATIONAL PHASE             | WELL RELEASE | BLOWOUT  | UNIT     |
|-------------------------------|--------------|----------|----------|
| Exploration Drilling (Normal) | 9.23E-04     | 1.20E-04 | Per well |
| Exploration Drilling          | 5.72E-03     | 7.42E-03 | Per well |

The blowout flow-paths and release points for the deep blowout exploration well based on the SINTEF Offshore Blowout Database are in Table 9-7 below,

**Table 9-7: Release Location Vs Exploration Well (Operating Phase)**

| BLOWOUT TYPE             | DRILL FLOOR | MOONPOOL | SHAKER HOUSE | SUBSEA |
|--------------------------|-------------|----------|--------------|--------|
| Deep Blowout Exploration | 0.25        | 0.03     | 0.03         | 0.69   |

The flow rates for the different blowout scenarios will vary depending on the type of well drilled. The flow rates used in this assessment, based on the existing QRA, are as detailed in Table 9-8.

**Table 9-8: Blowout Rates**

| WELL TYPE    | FULL FLOW  | CHOKE / RESTRICTED FLOW |
|--------------|------------|-------------------------|
| Normal wells | 130 kg/sec | 26 kg/sec               |
| HPHT wells   | 260 kg/sec | 52 kg/sec               |

As with the existing QRA, the ignition probability for oil and gas blowouts has not been differentiated. This is because the flashing of the well stream from an oil reservoir normally results in a significant gas release in addition to the oil. A generic ignition probability has been used in this analysis; it pertains to early ignition (i.e., within 5 minutes) of the releases. The ignition probability is presented in Table 9-9:

**Table 9-9: Ignition Probabilities for Blowouts**

| INCIDENT             | IGNITION PROBABILITY |
|----------------------|----------------------|
| Topside Deep Blowout | 0.13                 |

Table 9-10 presents the blowout frequencies applied in the Asopus-1 personnel-risk calculations. These frequencies are retained from the existing Stena DrillMAX QRA basis rather than recalculated using the project-specific E-SID reliability result.

**Table 9-10: Blowout Frequencies Per Year**

| BLOWOUT TYPE   | BASE CASE (HP/HT EXPLORATION WELL) |
|----------------|------------------------------------|
| Drillfloor     | 7.42E-04                           |
| Moonpool       | 9.28E-05                           |
| Shale Shaker   | 9.28E-05                           |
| Subsea         | 2.04E-03                           |
| Total Blowouts | 2.97E-03                           |

Based on the analysis of the SINTEF Offshore Blowout Database, the average immediate fatalities for HPHT wells from the existing DrillMAX QRA are shown in Table 9-11 below. These values have been retained as a conservative basis for the Asopus-1 assessment.

**Table 9-11: Average Immediate Fatalities**

| AREA                            | AVERAGE IMMEDIATE FATALITIES |      |
|---------------------------------|------------------------------|------|
|                                 | NORMAL                       | HPHT |
| Ignited blowout on              | 1.5                          | 4    |
| Ignited blowout in shaker house | 2                            | 2    |
| Unignited                       | 0.12                         | 0.12 |

Ignited well releases are assumed to result in one immediate fatality. Well releases are controlled by barriers in place at the time of the release, e.g. BOP. Hence, well releases are not considered to escalate or necessitate drillship evacuation.

The following rule applied in the existing QRA has been replicated here to calculate evacuation and escape fatalities for the specific blowout scenarios considered:

- If the MODU cannot move off location, personnel will attempt to abandon the vessel using the TEMPSC irrespective of whether the blowout has ignited.
- If the TEMPSCs do not function either due to mechanical failure or because they are impaired, personnel unable to evacuate would escape to sea using escape chutes and liferafts.

Two categories of fatalities have been defined as follows,

- Immediate fatalities - restricted to members of the operational worker group, i.e. drilling personnel.



Immediate fatalities are considered to occur even with a warning of a blowout, as it is assumed that the drill crew would still be attempting to control the kick when the blowout occurs.

- Evacuation / support vessel fatalities – fatalities because of drillship evacuation and/or escape to sea.

### 9.5.1.2 Project-specific well control barrier. K-BOS E-SID

In addition to the well-control barriers considered within the existing Stena DrillMAX QRA, the Asopus-1 campaign will deploy the K-BOS Emergency Shut-In Device (E-SID) supplied by Kinetic Pressure Control. The E-SID is an independently actuated subsea shear-and-seal device installed below the Stena DrillMAX subsea BOP stack, providing an additional well-control barrier independent of the primary BOP control system.

The E-SID forms a third layer within the project-specific well-control barrier hierarchy, supplementing the primary well barrier and the Stena DrillMAX BOP system. In the unlikely event that conventional well-control measures and BOP intervention fail to achieve or maintain well isolation, the E-SID provides an additional means of isolating the well at the wellhead through an independent shear-and-seal mechanism. The device is pre-installed as part of the drilling system and is available throughout drilling operations.

The existing Stena DrillMAX QRA provides the conservative basis for the quantified MODU personnel-risk results, without quantitative credit for the additional E-SID risk reduction. The project-specific E-SID reliability assessment is used separately to determine the representative environmental loss-of-containment scenario for the ESIA and to support the well-control ALARP demonstration.

Independent probabilistic reliability assessments undertaken for the combined BOP and E-SID configuration indicate a substantial reduction in blowout probability compared with a conventional BOP-only configuration. The Project-specific analysis indicates that the estimated probability of an uncontrolled blowout decreases from  $1.20 \times 10^{-4}$  to approximately  $2.08 \times 10^{-8}$  per well after deployment of the E-SID.

On this basis, a sustained uncontrolled subsea blowout is not adopted as the representative environmental loss-of-containment scenario for the Asopus-1 ESIA. The K-BOS E-SID provides material project-specific risk reduction and supports the demonstration that well-control risks have been reduced to ALARP.

The representative environmental release scenario adopted for the ESIA is an instantaneous loss of 350 m<sup>3</sup> of Marine Gas Oil from a fuel tank on board a Platform Supply Vessel supporting the drilling campaign. The transport, weathering and fate of this release are assessed through the oil spill modelling (Section 9.7).

This conclusion does not remove the requirement to maintain contingency source-control and emergency-response arrangements for more severe escalation scenarios, including BOP intervention, capping, containment and relief-well planning.

### 9.5.1.3 Fires in mud treatment areas

The data and assumptions used in the analysis of the fires in the mud treatment are as follows,

- The frequency of fires in the mud system is 8.14E-03 per year, based on 9 mud area fires in 1105 years of MODU operations in the UKCS.
- Of all the reported mud area incidents examined, none was found to escalate beyond the area of initiation. However, the QRA assumed that 1.5% (i.e. probability of 0.015) of all incidents will escalate to

surrounding areas. The escalation probability assumes that the mud processing areas will be equipped with appropriate protection measures to minimise the likelihood of escalation

- Escalation to the LQ/ TR is considered remote.
- Environmental damage is considered to be negligible for all scenarios.
- All ignited events have 1 immediate fatality.
- People away from the immediate vicinity are assumed to be unharmed.
- Evacuation is not considered necessary since the LQ is unlikely to be impaired.

#### 9.5.1.4 Release of toxic gas

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The data and assumptions used in the analysis of the release of toxic gas are as follows,

- Consistent with the existing DrillMAX QRA, sour gas blowouts are assumed to result in 3 immediate fatalities.

#### 9.5.1.5 Other fire events

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##### 9.5.1.5.1 Fire in Accommodation (Living Quarter / Temporary Refuge)

The frequency of fires in the accommodation is estimated to be 1.42E-02 per year based on inspection of UK HSE accident databases (21 accommodation incidents in 1416.3 floating unit years of operation in UKCS). Most of the accommodation fires reviewed were minor, causing little or no damage. However, the QRA assumed an escalation probability of 1%, and in the event of escalation, a single fatality is assumed, based on the provision of detection in all spaces and an accommodation water sprinkler system.

##### 9.5.1.5.2 Fire in main engine rooms

The data and assumptions used in the analysis of fires in main engine rooms are as follows,

- Escalation is considered unlikely in view of the safeguards in place, however, a probability of 1% has been assumed.
- In events where firefighting is ineffective one immediate fatality is assumed.
- Potential environmental damage is considered to be negligible.
- The frequency of fires has been increased by a factor of 2 to reflect the fact that there are 3 engine rooms.
- Engine room fires are not considered to result in TR impairment.

## 9.5.2 Non-Hydrocarbon release frequencies

### 9.5.2.1 Ship collision

The frequency of a ship colliding with the drillship is a function of the level of the vessel traffic in the area and the preventative measures available to avert a collision, and therefore a location-specific risk assessment should be undertaken any time the drillship is operating in a new location.

From the QRA and for the purposes of this analysis, the average passing collision frequency has been estimated from the HSE database. An examination of the database shows a total of 1 passing-vessel collision between MODUs and vessels in 1100.1 MODU years. This gives a total collision frequency of 2.1E-03 per year and a frequency of collisions resulting in damage of 9.09 E-04 per year. As the MODU can disconnect from the well and move off location on DP, this value is taken as the frequency of a vessel being on a collision course.

For the MODU drillship, there are two primary ways of avoiding collision once a threat has been confirmed through the use of the ARPA (or via visual observation).

- Warning the vessel causing a threat, using available means of communication.
- Disconnecting and moving the drillship to a safe location.

For the drillship's ARPA to be effective in preventing collisions, the drillship's onboard communication systems must be used to contact ships that pose a risk to the drillship. Action must then be taken on the approaching vessel to avoid collision. The nearby support vessel can also be used to avert a collision by turning towards the approaching vessel and using sound and light signals. However, for the approaching vessel to respond to radio calls, sound, or light signals, the bridge must be manned, and personnel on board the vessel must be able to carry out appropriate corrective actions. In the event efforts to establish radio contact with the approaching vessel fail, collisions can be avoided by moving the drillship. Several causes that may result in the approaching vessel not responding to the signals from the drillship (or the attendant vessel) are listed in Table 9-12 below.

**Table 9-12: Probability Of Unsuccessful Correction of Vessel on Collision Course**

| ERROR MODE                   | FRACTION OF ERRANT VESSEL WHERE ERROR MODE IS PRIMARY CAUSE OF VESSEL BEING ON COLLISION COURSE | PROBABILITY OF RADAR / RADIO BEING INADEQUATE MEASURE TO PREVENT COLLISION |
|------------------------------|-------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| Crew absent from bridge      | 24%                                                                                             | 0.9                                                                        |
| Crew absorbed in other tasks | 20%                                                                                             | 0.5                                                                        |
| Accident on vessel           | 4%                                                                                              | 0.9                                                                        |
| Crew asleep                  | 8%                                                                                              | 0.6                                                                        |
| Crew intoxicated             | 4%                                                                                              | 0.8                                                                        |
| Radar failure                | 40%                                                                                             | 0.5                                                                        |
| <b>Total</b>                 | <b>100%</b>                                                                                     | <b>0.63</b>                                                                |

The probability of the ARPA being used and being unsuccessful in preventing the collision is therefore taken to be 0.63 (given ship on collision course). A review of available AIS and marine traffic information for the Asopus-1 location confirmed that the adopted collision frequencies remain conservative.

Moving the drillship off location is assumed to be successful 95% of the time this operation is deemed necessary. The operations involved in disconnecting are assumed to be technically successful almost every time they are initiated. For instance, the decision to carry out an emergency disconnection must be made early enough to allow the drillship to move the required distance to prevent a collision. The assigned successful move off probability of 95% is therefore considered to be conservative. The annual collision frequencies are shown in Table 9-13, depending on whether the ARPA system is actively used and move-off is initiated.

**Table 9-13: Annual Collision Frequency**

| MEASURES                                                                                                        | FREQUENCY PER YEAR |
|-----------------------------------------------------------------------------------------------------------------|--------------------|
| Frequencies if only a nearby support vessel is available                                                        | 9.09E-04           |
| Frequencies if ARPA radar and radio are actively used                                                           | 3.36E-03           |
| Frequencies if ARPA radar and radio are used, and the drillship takes measures to move off location if required | 1.68E-05           |

In the case of the drillship, the risks are assessed assuming ARPA and radio are used and that the drillship takes measures to move off location if required, i.e. a frequency of 1.68E-05 per year is used.

### 9.5.2.2 Structural failure

Historically, structural failures have been caused by the development of large cracks in the hull resulting from brittle fracture, corrosion, excessive local stresses causing ingress of water into cargo tanks, ballast tanks or engine rooms, and ultimately resulting in the vessel sinking. It is assumed that rigorous procedures will be in place to detect and repair cracks in the hull at an early stage, thereby significantly reducing the risk of unexpected catastrophic structural failure.

The annual frequency of structural failure is taken to be 3.2E-04, and this is the frequency of severe structural failure for all non-fixed units (excluding failures during towing) from IOGP 434.

### 9.5.2.3 Reduction in stability

The frequency of capsizing a vessel largely depends upon the environmental conditions experienced. A generic frequency of capsize of 5.7E-05 per year in severe weather is assumed to be based on the CMPT Guide to QRA for Offshore Installations. In moderate-to-calm conditions, this frequency is 1.69E-06 per year.

### 9.5.2.4 Loss of position

Based on historical data published by the International Maritime Contractors (IMCA) from loss of position incidents reported up to 2022 for all types of DP vessels which reports a total of 205 incidents by 600 vessels between 2015 and 2022 with a combined operating time of 2.35 million hours.

These incidents are inclusive of DP2 and DP3 vessels and as the MODU is a DP3 vessel, a 20% reduction has been applied to the loss of position statistics giving a frequency of 0.27 operating year (based on a 45% fraction of the year operating on DP). The IMCA collects statistical data from DP operated vessels around the world (data between 2015 and 2022 has been used in this assessment). Probability values of 25%, 46% and 28% have been assigned to drive-off, drift-off and large excursion.

### 9.5.2.5 Dropped objects

The frequency of dropped objects is taken from a study of incidents on MODUs in the UK during the period 1980 to 1998 based on incidents reported to the HSE during this time and scaled for the predicted number of lifts in the appropriate load category. Table 9-14 shows the frequency data used.

**Table 9-14: Dropped Object Frequency Data**

| FREQUENCY DATA                                 | ONTO INSTALLATION | INTO SEA | ONTO SUPPLY VESSEL | FATALITIES PER FATAL EVENT |
|------------------------------------------------|-------------------|----------|--------------------|----------------------------|
| Frequency of main crane drop loads per year    | 2.03E-01          | 3.65E-02 | 5.06E-02           | 1                          |
| Frequency of drops from drill tower per year   | 2.90E-01          | 1.82E-02 | 1.66E-03           | 2                          |
| Frequency of drops from other devices per year | 1.63E-01          | 2.32E-02 | 8.29E-04           | 1                          |

The frequencies of a fatality resulting from a dropped object are inherently captured under occupational risk and as a result the dropped object risks calculated are a subset of this. As a result, the overall risk results are not altered by the presence of dropped object risk calculations and instead only the %contribution will change. Given that the data used in the model specific to dropped object risks is old the availability of new technology which removes the manual handling aspect of dropped objects (this is particularly appropriate for the making up of drill string during running in hole and pulling out of hole as a result the likelihood of a drop occurring is reduced and also the likelihood of that drop resulting in a fatality is reduced. This means that the process described here is conservative in spite of the results having no bearing on the final risk results.

### 9.5.2.6 Occupational risks

Accident statistics are reported in the UK by the HSE, in Norway by the Petroleum Safety Authority (PSA) and worldwide by both the International Association of Drilling Contractors (IADC) and International Association of Oil and Gas Producers (IOGP).

Using the approach defined in IOGP 434-12, the following occupational risks have been identified

- Worldwide fatal accident rate – 1.37 per 10<sup>8</sup> exposed hours
- Modification factor for specific function – 1.6 (North Sea – drilling) and 0.1 (admin / catering)
- Location factor – 0.92 (offshore)
- Shift pattern – 12 hours on / 12 hours off – off-shift personnel.

In the absence of a specific location factor for Greece, the factor adopted in the existing DrillMAX QRA has been retained for consistency with the established methodology.

The FAR values for occupational risk per worker group are detailed in Table 9-15.

**Table 9-15: Occupational Hazards Fatal Accident Rates**

| RISK CONTRIBUTOR  | FATAL ACCIDENT RATE (PER 10 <sup>8</sup> EXPOSED HOURS) |             |               |
|-------------------|---------------------------------------------------------|-------------|---------------|
|                   | GROUP 1                                                 | GROUP 2     | GROUP 3       |
|                   | OPERATIONAL                                             | MAINTENANCE | ACCOMMODATION |
| Occupational risk | 2.35                                                    | 2.35        | 0.15          |

## 9.6 Consequence assessment

Consequence assessments have been carried out to determine the impacts beyond the immediate vicinity of the events, based on the scenarios detailed below.

In this analysis, four release locations (drill floor, moonpool, shaker house and subsea) have been considered and the effects of the following:

- Fires (effects from ignited blowouts)
- Smoke dispersion from ignited blowouts
- Gas dispersion from unignited blowout

The explosion analysis was undertaken in the QRA using the DNV COMEX software tool, and each consequence was evaluated at the specified release location using the latest version of the internationally recognised DNV Phast consequence analysis software. The output from this consequence analysis was used in the impact analysis to evaluate the number of fatalities and the likelihood of safety function impairments.

Note 1: The consequences applied in this assessment are derived from the existing Stena DrillMAX QRA. Where applicable, the resulting risk estimates have been adjusted to reflect the single-well Asopus-1 campaign and the project-specific personnel-on-board assumptions.

### 9.6.1 Thermal and radiation effects

A drill floor fire that ignites immediately will burn as jet fire. Delayed ignitions are likely to result in explosions that would cause significant damage to the steel weather protection, generating missiles and other debris. Following an explosion, the blowout will continue to burn.

The drill floor and monkey board level are protected by weather cladding, but the drill tower is otherwise open. Flames could fill the entire drill floor and drill tower area and will be issued from normal openings in the drill tower.

For an ignited drill floor blowout, there is little protection in areas on the open upper deck levels of the vessel. Ignited drill floor blowouts were modelled in the QRA as jet fires with a composition of 80% methane and 20% pentane.



Jet fires were modelled at three wind speeds (1.5m/s, 5m/s and 15m/s). Thermal radiation and smoke from an ignited drill floor blowout could impair the TR and lifeboats or cause the drill tower to collapse if the event escalates.

Delayed ignition may result in a flash fire or explosion, generating significant overpressure that can damage critical equipment or cause fatalities. Unignited blowout events are modelled as gas dispersion using propane as the representative material.

Gas ingress to the TR may cause asphyxiation or explosion if ignited. Radiation contours have been produced to determine the impact of drill floor fire at the living quarter and lifeboat locations; refer to QRA. The impairment probabilities for the forward and at TEMPSC based on the radiation consequence modelling are shown below (Table 9-16, Table 9-17).

**Table 9-16: Forward TEMPSC Impairment Probabilities**

| LOCATION   | RELEASE                      | WEATHER STATE | WIND DIRECTION   |              |               |                    |
|------------|------------------------------|---------------|------------------|--------------|---------------|--------------------|
|            |                              |               | FROM THE FORWARD | FROM THE AFT | FROM THE PORT | FROM THE STARBOARD |
| Drillfloor | Restricted blowout – 52 kg/s | Calm          | 0                | 0            | 0             | 0                  |
|            |                              | Moderate      | 0                | 0            | 0             | 0                  |
|            |                              | Severe        | 0                | 0            | 0             | 0                  |
|            | Full flow blowout – 260 kg/s | Calm          | 0                | 0            | 0             | 0                  |
|            |                              | Moderate      | 0                | 0            | 0.5           | 0.5                |
|            |                              | Severe        | 0                | 0            | 0.5           | 0.5                |
| Moonpool   | Restricted blowout – 52 kg/s | Calm          | 0                | 0            | 0             | 0                  |
|            |                              | Moderate      | 0                | 0            | 0             | 0                  |
|            |                              | Severe        | 0                | 0            | 0             | 0                  |
|            | Full flow blowout – 260 kg/s | Calm          | 0                | 0            | 0.5           | 0.5                |
|            |                              | Moderate      | 0                | 0            | 0.5           | 0.5                |
|            |                              | Severe        | 0                | 0            | 0.5           | 0.5                |

**Table 9-17: Aft TEMPSC Impairment Probabilities**

| Location   | Release                      | Weather State | Wind Direction   |              |               |                    |
|------------|------------------------------|---------------|------------------|--------------|---------------|--------------------|
|            |                              |               | From the Forward | From the Aft | From the Port | From the Starboard |
| Drillfloor | Restricted blowout – 52 kg/s | Calm          | 0                | 0            | 0             | 0                  |
|            |                              | Moderate      | 0                | 0            | 0             | 0                  |
|            |                              | Severe        | 0                | 0            | 0             | 0                  |
|            | Full flow blowout – 260 kg/s | Calm          | 1                | 0            | 0             | 0                  |
|            |                              | Moderate      | 1                | 0            | 0             | 0                  |
|            |                              | Severe        | 1                | 0            | 0             | 0                  |
| Moonpool   | Restricted blowout – 52 kg/s | Calm          | 0                | 0            | 0             | 0                  |
|            |                              | Moderate      | 0                | 0            | 0             | 0                  |
|            |                              | Severe        | 0                | 0            | 0             | 0                  |
|            | Full flow                    | Calm          | 1                | 0            | 0             | 0                  |

| Location | Release            | Weather State | Wind Direction   |              |               |                    |
|----------|--------------------|---------------|------------------|--------------|---------------|--------------------|
|          |                    |               | From the Forward | From the Aft | From the Port | From the Starboard |
|          | blowout – 260 kg/s | Moderate      | 1                | 0            | 0             | 0                  |
|          |                    | Severe        | 1                | 0            | 0             | 0                  |

## 9.6.2 Smoke & gas dispersion modelling

The smoke plume from an ignited blowout could overcome escaping personnel or engulf the living quarter and possibly result in fatalities. Smoke and gas following a blowout have been modelled in PHAST. As a conservative estimate the concentration of smoke or gas at the HVAC inlet has been assumed to be the maximum concentration of gas or smoke 67m downwind of the drillfloor and moonpool at an elevation of 40m. The height of the gas or smoke plume relative to the HVAC inlet has been ignored for added conservatism and to try to estimate the effect of the vessel structure. For example, gas and smoke coming from the moonpool will hit the vessel structure, lose momentum, and spread out.

Smoke has been modelled as hot nitrogen with a flowrate 16 times greater than the blowout flowrate. The concentrations estimated at the HVAC inlet are listed below:

- Full blowout from drillfloor
- Smoke - 0.71% (7,050 ppm)
- Gas - 0.42% (4,150 ppm)
- Restricted blowout from drillfloor
- Smoke - 0.22% (2,160 ppm)
- Gas - 0.10% (1,000 ppm)
- Full blowout from moonpool
- Smoke - 2.49% (24,900 ppm)
- Gas - 0.42% (4,150 ppm)
- Restricted blowout from moonpool
- Smoke - 0.33% (3,250 ppm)
- Gas - 0.33% (3,350 ppm)

The impairment criteria give the threshold values of the materials that make up the smoke plume. Like the smoke plume graph, the criteria provide input to enable calculation of the time to impairment. Smoke impairment criteria have been specified as per Table 9-18.

**Table 9-18: Smoke Impairment Criteria**

| MATERIAL        | THRESHOLD | DESCRIPTION                                                                                                                                              |
|-----------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Carbon monoxide | 0.15%     | Limit for impairment of an escape route in 30 minutes. Escape is considered possible in 30 minutes without any escape-impairing or irreversible effects. |
| Carbon dioxide  | 10%       | Limiting concentration for escape actions lasting a few seconds. If escape action is not possible in a few seconds, death is assumed to occur.           |
| Smoke density   | 10 dB/m   | Approximately 1m visibility for un-illuminated objects.                                                                                                  |

| MATERIAL         | THRESHOLD | DESCRIPTION                                                           |
|------------------|-----------|-----------------------------------------------------------------------|
| Temperature      | 40 °C     | -                                                                     |
| Oxygen depletion | 16%       | Limiting oxygen concentration for impairment of an escape route or TR |

### Smoke and Gas Impairment Times

Under normal operating conditions, the impairment potential for the TR due to smoke and gas from blowouts is assessed to be low, as the TR will normally be located upwind of the drilling derrick. However, impairment could occur under abnormal conditions, such as loss of HVAC isolation, failure of automatic shutdown systems, loss of TR integrity, or vessel manoeuvring during an emergency response.

Gas releases from small blowouts are assessed to produce flammable concentration at the nearest TR air intake. Although the gas concentration is estimated at 50% LFL, ignition may still be possible if the gas cloud finds an ignition source. Provided the air intake or other possible ingress routes are not breached the TR is unlikely to be impaired within the 60 minutes endurance time.

Similarly, smoke impairment of the TR may occur if the HVAC fails to shut down or where hermetic sealing is lost. Impairment is estimated to occur within 2 minutes. Where the TR is sealed before a restricted blowout event, the temporary refuge is unlikely to be impaired within the endurance time of 60 minutes.

The integrity of the HVAC is therefore critical to the ability of the TR to provide the necessary safety function.

### Subsea Blowouts

Hydrocarbon fluid from subsea blowouts rise to the surface due to their relatively low density. Gas releases rise rapidly, expanding as the hydrostatic pressure reduces. For oil with a significant gas component, the oil may be entrained in the gas flow and rise almost vertically to the surface with little dispersion in the water column. Methane gas has been used as the worst-case representative gas as it is relative less dense than ethane or propane.

DNV PLUMERISE software has been used to enable the analysis of gas dispersion through water column and the calculation of parameters such as plume diameter, gas velocity and surface concentration which can then be used as input to surface dispersion modelling.

The Asopus-1 water depth of approximately 840 m lies within the range assessed in the existing DrillMAX QRA and therefore the conclusions of the subsea blowout dispersion assessment remain applicable. At these depths, a sustainable flammable gas cloud at the topside is considered unlikely. The maximum concentration for a flammable cloud at water depth of 500 m is estimated at 3% of methane,

Of the 24 subsea blowouts included in the dataset used in the QRA. 2 of the blowouts ignited. In both cases the water depth was less than 100 m. The water depth of this Asopus-1 well is 840m, hence a sustainable flammable gas cloud at the topside due to subsea blowout is not expected.

## 9.6.3 Fire in mud treatment areas

The QRA assumed that 1.5% (i.e. probability of 0.015) of all incidents will escalate to surrounding areas. The escalation probability assumes that the mud treatment areas will be equipped with appropriate protection measures to minimise the likelihood of escalation.

Based on all of the reported mud area incidents examined in the QRA, none was found to escalate beyond the area of initiation. Hence, consequence modelling for the fire in mud treatment area was not carried out and is excluded in this report.

#### 9.6.4 Release of toxic gas

Detection and mitigation measures in place are assumed to include H<sub>2</sub>S detectors located in the areas where gas is most likely to be released. Detection of toxic gas (10 ppm) will give alarm. High toxic gas (20 ppm) will initiate relevant emergency shutdown actions, including automatic control of the ventilation system in the related area.

The drillship crew is likely to be aware in advance of drilling into a potentially sour reservoir and appropriate additional measures to manage the H<sub>2</sub>S hazard would be put in place.

Toxic gas (blowout) events were modelled in the QRA assuming that, in the event of an unignited blowout resulting in the release of toxic gas, the vessel will attempt to move off location. LQ impairment is unlikely, as the LQ will normally be upwind of the drilling area. In this scenario, it was assumed that there is a 93% probability that the HVAC system shuts down successfully and that the TR is not impaired. TR impairment is unlikely, as the TR will normally be upwind of the drilling area.

#### 9.6.5 Other fire events

In the event of an escalated accommodation fire, the integrity of the control room could be compromised, leading to control room impairment and on the MODU, the main control room is located above the accommodation block. Fire in the main engine room is not considered to result in living quarter impairment.

#### 9.6.6 Ship collision

If an errant vessel is heading towards the drillship, it will attempt to communicate with the vessel to determine her status i.e. whether the approaching vessel is under command, restricted in her ability to maneuver or unaware of the danger. Initially, contact would be established by radio or other suitable means. If these fails preventative action would be taken by the vessel to avoid collision. This may include disconnecting the riser and attempting a move-off.

If move off is unsuccessful, collision with the drillship could impact hull tanks containing diesel or base oil. The potential for ignition exists although the high flash point of diesel and the base oil reduce the likelihood of a fire. The main damage from this event is likely to be environmental and asset related. The severity of the environmental damage depends on the inventory of oil onboard the drillship.

Based on work by Amdahl and Kavlie on the design of tankers as cited in the QRA, a maximum of 20% of the merchant vessel collisions more than 100MJ are assumed to result in total loss of the vessel due to severe structure damage, capsize, and/or foundering.

- Probability of Head-On collision = 0.6
- Probability of Total Collapse = 0.2

- Probability of severe heel given collision but no capsize = 0.2

The personnel risk has been calculated based on the frequency of impairment of the main safety functions. For events that cause a total collapse, 50% of the personnel are expected to end up in the sea, while 50% will evacuate via TEMPSC. This number assumes that an evacuation is not carried out every time it is needed. Where a strong collision occurs and only moderate damage is sustained, evacuation is considered to be carried out by TEMPSC. For all other collisions, no evacuation is considered.

For environmental releases, the significant consequence assumed following total collapse is based on the inventory of fuel oil onboard the drillship.

### 9.6.7 Structural failure

Structural failures are only likely to result in fatalities if they require evacuation actions to be taken. This is only likely if the drillship either founders or capsizes, or in the event that listing should be so severe that capsize appears likely. Such events are normally considered to only occur in moderate or severe weather. In these conditions, evacuation is hazardous.

The probability of personnel becoming fatalities during evacuation in moderate or severe weather depends strongly on the means available for evacuation and on the time available before capsize occurs. Rapid capsize in a few minutes would result in all persons entering the sea and a high number of fatalities. Capsize in about 30 minutes would allow evacuation by TEMPSC.

Any event which results in capsize is likely to result in severe environmental damage.

### 9.6.8 Reduction in stability

As stated above, a reduction in stability could lead to foundering or capsize with consequent loss of life, loss of assets and environmental damage.

For events resulting in rapid foundering and/or capsize, it is likely that all personnel will end up in the sea since there will not be time to evacuate using the TEMPSCs. Such events are considered to occur only in severe weather. The chance of rescue and recovery in such cases is assessed to be low.

### 9.6.9 Loss of position

Following a loss of positioning incident, an attempt would be made to close the BOP and disconnect the riser. If this action succeeds, i.e. closure of the BOP and riser disconnection, it is assumed that there will be no significant damage to the well where the disconnected riser impacts the seabed.

When a loss of position occurs, two possible situations could arise:

- A successful disconnection from the BOP: If a disconnection of the riser is successful, there will be no damage except if the riser hits the bottom.
- a failure to disconnect - if disconnection is not successful, it has been assumed that the riser will part and the BOP will close

It is not expected that loss of station keeping will result in loss of life or impairment of safety functions, as the seaworthiness of the vessel will not be affected. In the unlikely event that loss of position leads to a well release or blowout (e.g. if the BOP fails to close) this is included under the relevant event.

Failure to close the BOP and failure to disconnect from the BOP is mainly caused by either,

- LMRP connector failure.
- Shear-ram failure / disabled shear-ram.
- BOP control system failure.
- Operator failure.

The Offshore Reliability Database (OREDA) gives an on-demand failure rate of LMRP connectors of 2E-02 per operation. OREDA also gives failure rates for shear-rams, with a shear-ram failure implying that the shear-ram does not respond and fails to cut the drill string. The shear-ram failure rate is less than 1E-03 per operation. Further, from OREDA, an on-demand failure rate for the BOP control system is expected to be less than 1E-03 per operation.

A fail-safe system is incorporated in the BOP system. Hence, if a loss-of-position situation occurs when the disconnection button is pressed or the riser is parted before the BOP closes, the BOP will, in most cases, close due to the fail-safe system.

The final cause for unsuccessful disconnection is operator failure. Such failures are difficult to quantify, and a range of different probabilities exists. The probability of operator failure has been assumed to be 1E-02 or 1%. This estimate assumes that the personnel on board the drillship are experienced and is considered conservative. Closure of the BOP and disconnection can be executed separately or by pressing the disconnection button, which initiates a pre-programmed sequence of closing in BOP rams and disconnecting from the well. Based on the above discussion, four possible scenarios may be established, giving typical consequences for a loss of position incident.

The consequences due to loss of position have been represented by the event tree (Figure 9-7).

| Frequency of loss of position | Probability of drive-off / drift-off or excursion | Probability of BOP failure | Probability of LMRP failure / operator failure | Event Frequency | Description                                                                                       |
|-------------------------------|---------------------------------------------------|----------------------------|------------------------------------------------|-----------------|---------------------------------------------------------------------------------------------------|
| 2.70E-01                      | 0.72                                              | 0.002                      | 0.03                                           | 1.16E-05        | BOP not closed / disconnect fails.<br>Extensive material / environmental damage                   |
|                               |                                                   |                            | 0.97                                           | 3.75E-04        | BOP not closed / successful disconnect.<br>Minor material damage / extensive environmental damage |
|                               |                                                   | 0.998                      | 0.03                                           | 5.79E-03        | BOP closed / disconnect fails.<br>Extensive material damage / negligible environmental damage     |
|                               |                                                   |                            | 0.97                                           | 1.87E-01        | BOP closed / successful disconnection.<br>Minor material damage / negligible environmental damage |
|                               | 0.28                                              |                            |                                                | 7.67E-02        | Large excursion.<br>Negligible material / environmental damage.                                   |

Figure 9-7: Consequences of Loss of Position



Loss of station-keeping ability will most likely result in severe material / economic damage if the BOP fails to close or the LMRP disconnects. A failure to close the BOP will result in severe environmental damage. Otherwise, a loss-of-position event will have negligible environmental consequences.

### 9.6.10 Dropped objects

Dropped loads may impact anywhere within the lifting pattern of the drillship cranes. Should the impact energy of a dropped load exceed the design capacity of the deck, the dropped object might penetrate the deck, resulting in damage on lower deck levels. The greatest risk to personnel is being hit or struck by a falling or swinging object.

Based on the analysis of dropped objects, 0.58% of incidents involving dropped objects resulted in fatalities. 0.58% of the predicted dropped loads on the installation are therefore assumed to result in fatalities.

As to the actual number of fatalities, it is assessed that a dropped load from a crane or other lifting device or from a boom fall, if it results in fatalities, will result in the death of 1 person. For dropped loads from the drilling derrick, a dropped load which results in fatalities is assumed to result in two deaths. The drill floor area is more congested and has a higher manning level, and therefore, there is a greater potential for fatalities than elsewhere. Fatalities are expected to occur predominantly among the operational and maintenance worker groups.

Dropped objects on the drill floor, for instance, from the tubular handling system, may cause a well control problem should critical equipment be damaged. The likelihood of this occurring is considered very low, given the design and high level of automation of the drillship's tubular-handling system. However, the recessed setback area has been identified as an area requiring particular attention during the design and definition of the dimensioning of accidental loads.

The probability of safety functions being impaired by dropped objects is expected to be negligible. This is based on the assumed design requirements imposed on the drillship, most importantly, the requirement to have a high degree of redundancy in primary and support systems, and that there will be no lifting directly over live hydrocarbon-containing equipment.

On offshore facilities dropped objects can result in high economic losses, resulting from a need to stop operations and carry out an investigation to determine root cause of the dropped object incident. Cranes can be classed as unfit for use until they have been inspected and re-certified, thus restricting operations on the drillship. Dropped objects are not considered to cause environmental damage.

## 9.7 Oil spill scenarios

### 9.7.1 Introduction

In addition to the potential impacts on personnel, which, as explained above, are the primary focus of the QRA, major accidents can also affect the environmental and socioeconomic receptors through the potential release of quantities of liquid hydrocarbons to sea. The QRA process has informed a range of credible oil spill cases for which fate and trajectory modelling and impact assessment have been performed. In the

framework of the above, detailed numerical Oil Spill Modelling has been prepared, and the conclusions are presented hereby.

To support the assessment, oil spill modelling was undertaken for an instantaneous surface spill scenario involving Marine Gas Oil (MGO). The scenario represents the loss of containment of 350 m<sup>3</sup> of MGO from a fuel tank onboard a Platform Supply Vessel supporting the drilling campaign. Following incorporation of the project-specific E-SID barrier, this surface spill has been adopted as the representative accidental release scenario for ESIA purposes. The assessment considered the temporal and three-dimensional evolution, transport, weathering and fate of the released MGO on the sea surface, within the water column and at the shoreline.

As mentioned in Chapter 6 as well as in the ALARP section of the present chapter, for the Asopus-1 campaign, Energean will deploy the K-BOS Emergency Shut-In Device (E-SID) as a pre-positioned subsea shut-in device installed between the wellhead and the Stena DrillMAX BOP stack. The E-SID provides an additional, independently actuated shear-and-seal capability at the wellhead. The combined BOP and E-SID configuration reduces the estimated probability of an uncontrolled blowout to approximately  $2.08 \times 10^{-8}$  per well. On this basis, a sustained uncontrolled subsea blowout is not considered a credible representative loss-of-containment scenario for the Asopus-1 campaign. Deployment of the pre-positioned E-SID therefore provides a material project-specific risk reduction and supports the demonstration that well-control risks have been reduced to ALARP. Accordingly, the subsea blowout modelling results are not relied upon for the assessment of the representative environmental release in this ESIA chapter. The instantaneous loss of 350 m<sup>3</sup> of MGO from a PSV fuel tank has instead been adopted as the representative accidental release scenario.

This conclusion does not remove the requirement to maintain contingency source-control arrangements, including BOP intervention, well capping, containment and relief-well planning, for emergency preparedness purposes, as well as all emergency response measures to be in place as per industry standards and legal requirements.

The oil spill modelling was developed in two stages. The first stage consisted of analysing the meteorological and hydrodynamic characteristics of the region, focusing on the environmental parameters that influence oil fate and trajectory. The second stage comprised oil spill simulations performed at the release location for two representative seasonal periods defined according to the prevailing metocean conditions in the study area.

The assumed spill location is approximately 44.3 km (23.9 nautical miles) offshore Othoni Island, approximately 3.2 km (1.7 nautical miles) from the Italian Exclusive Economic Zone (EEZ), and in water depths of approximately 840 m. Along the continental slope of the Ionian Sea, surface and subsurface circulation is primarily influenced by the Atlantic-Ionian Stream and by semi-permanent cyclonic and anticyclonic gyres. Near the spill location, current directions may vary considerably due to interactions between these circulation features and water mass exchanges through the Strait of Otranto. The regional meteorological regime is characterized by the seasonal influence of the Azores High, resulting in predominantly northwesterly winds during spring and summer, and by enhanced cyclonic activity during autumn and winter, when stronger and more variable winds may occur.

The seasonal classification adopted in this study reflects the annual variability of these metocean systems. Season 1 corresponds to the period from October to March, while Season 2 covers the period from April to September. Season 1 is characterized by stronger winds, predominantly from the north, with additional

influence from southerly and southwesterly sectors. Season 1 is within the proposed drilling window for Asopus-1.

Season 2 was modelled as a sensitivity case to test the influence of alternative metocean conditions on spill behaviour. In Season 2, northerly and northwesterly winds remain predominant but generally occur with lower intensities. Surface currents near the spill location are predominantly directed towards the west and southwest throughout the year. The Season 1 stochastic results from the primary risk-envelope basis for assessment of the proposed drilling period. The deterministic simulations presented later in this chapter were selected from the Season 2 stochastic simulation set and are retained only as supplementary sensitivity illustrations of specific spill trajectories under alternative seasonal conditions.

### 9.7.2 Oil spill modelling

The following modelling results represent the unmitigated transport and fate of the released MGO and do not account for oil-spill detection, containment, recovery or other response measures.

Simulations included a 30-day monitoring period following the release. Surface oil drift occurs in all directions during both seasons, with no significant seasonal differences due to the rapid evaporation and degradation characteristics of the product. Areas with the highest probabilities of occurrence are concentrated southwest of the spill location, primarily influenced by northerly winds and westward-to-northwestward surface currents.

Probabilities of occurrence greater than 90% remain restricted to approximately 2 km from the spill location. For the proposed drilling period represented by Season 1, the model indicates that oil may travel up to approximately 122 km within six days. However, this outer extent is associated with the lowest probability of occurrence and should not be interpreted as the expected or high-probability spill footprint. Natural oil dispersion within the water column may extend beyond the area affected at the sea surface, primarily within the upper 0–2 m layer.

For the proposed drilling season (Season 1), the highest shoreline contact probability is observed in Italy, reaching approximately 5%, with a minimum shoreline arrival time of approximately 2.8 days, assuming no oil spill response is undertaken. Sensitivity modelling undertaken for Season 2 identified higher probabilities of shoreline contact under alternative metocean conditions.

For Season 1, the dominant oil fate processes after 30 days are dispersion within the water column (approximately 55%), evaporation (approximately 30%) and biodegradation (approximately 11%-12%). Less than 0.05% of the released oil remains at the sea surface by the end of the simulation period.

Two deterministic sensitivity simulations were selected from the Season 2 stochastic simulation set, representing the shortest shoreline-arrival time and the maximum oil mass reaching the shoreline identified during Season 2. Both sensitivity simulations predicted contact with Othoni Island, Greece, within approximately 2–3 days. No surface oil thickness above the adopted 0.3 µm threshold was predicted after approximately 10 days. Evaporation accounted for approximately 56–60% of the released mass, while oil stranded on the shoreline accounted for approximately 0.4% in the Minimum Arrival Time case and 5.2% in the Maximum Mass on Shore case.

The deterministic simulations provide supplementary information on specific spill trajectories under alternative seasonal metocean conditions. They are not representative deterministic simulations of the

proposed February/March drilling period and do not replace the Season 1 stochastic results as the primary basis for the ESIA assessment.

It should be noted that oil spill model results do not account for the effects of spill response and clean-up operations on oil fate and trajectory. While these models provide a valuable planning and assessment tool by indicating the potential behaviour and extent of an unmitigated spill, they represent a conservative scenario rather than a prediction of actual spill outcomes. In the event of a real incident, response operations would influence the trajectory, persistence, and extent of oiling. Consequently, modelled results are unlikely to be fully representative of a real spill incident and should be interpreted as indicative rather than predictive.

### 9.7.3 Study area

#### 9.7.3.1 Well location

As presented earlier in the study, Block 2 is located on the continental slope off western Greece and eastern Italy, with water depths ranging from 150 m to 3,000 m. The operational area lies approximately 44.3 km (23.9 nautical miles) offshore Othoni Island, approximately 3.2 km (1.7 nautical miles) from the Italian EEZ and in water depths of approximately 840 m. The location and geographical coordinates of the release point are presented below:

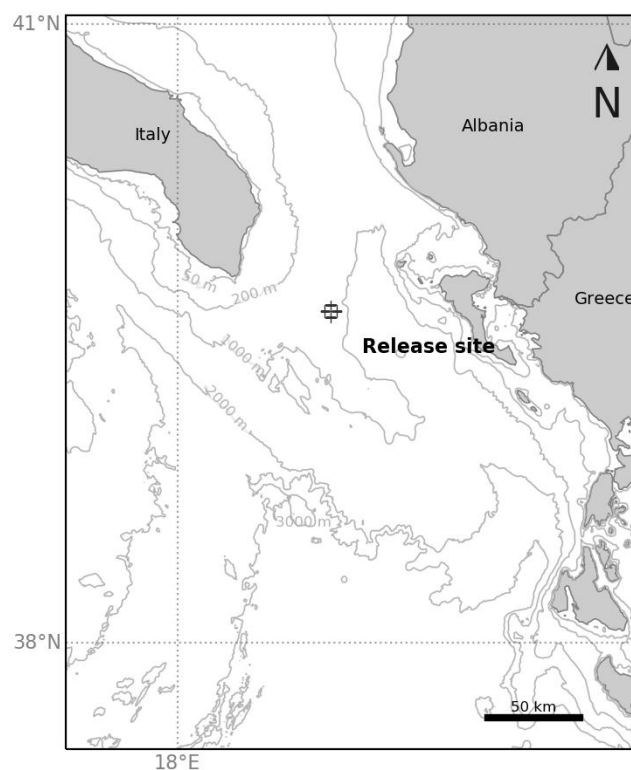


Figure 9-8: Location used in oil spill modelling

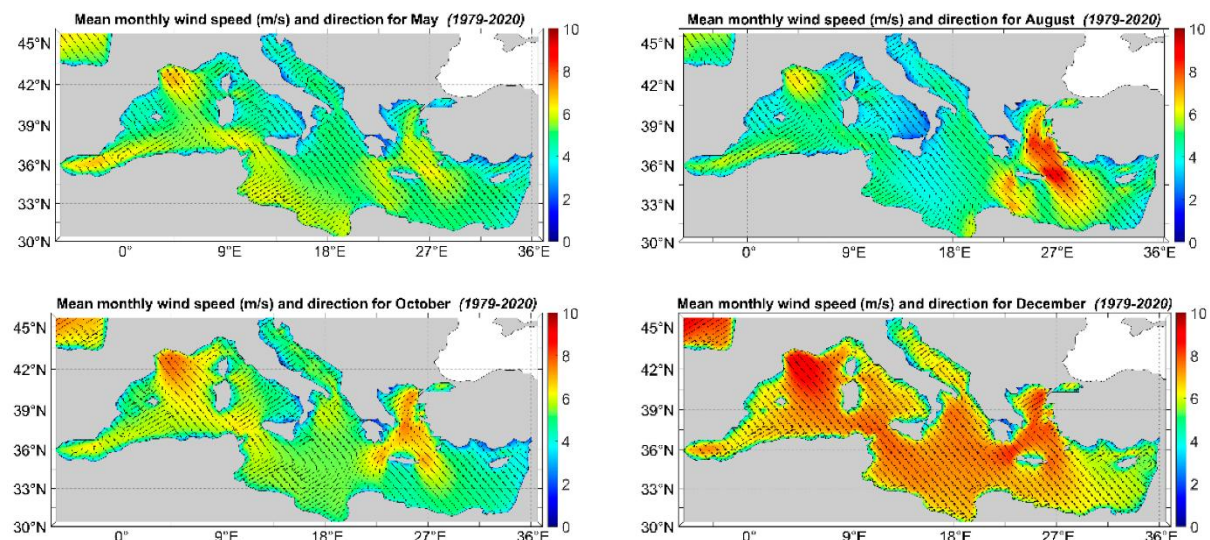
Table 9-19: Coordinates and water depth at the release site considered in the modelling. Datum WGS84

| RELEASE SITE | LONGITUDE       | LATITUDE        | DEPTH (M) |
|--------------|-----------------|-----------------|-----------|
| Asopus-1     | 18° 57' 28.51"E | 39° 37' 25.92"N | 840       |

### 9.7.3.2 Metocean Conditions

The atmospheric circulation over the Central Mediterranean, where the spill site is located, is controlled by the interaction between subtropical high-pressure systems, mid-latitude cyclones, and the complex topography surrounding the basin (Lionello et al., 2006; Xoplaki et al., 2004). The Ionian Sea, located between southern Italy and western Greece, lies in a transitional zone between the subtropical circulation of North Africa and the mid-latitude atmospheric systems moving across Europe. As a result, the region experiences marked seasonal variability in both wind intensity and direction (Lionello et al., 2006).

During spring and summer, the eastward extension of the Azores High dominates the atmospheric circulation over the Mediterranean Basin (Mariotti and Dell'Aquila, 2012). This large-scale anticyclonic system promotes stable weather conditions, reduced cloud cover, and relatively weak pressure gradients. Under these conditions, northerly to northwesterly winds become prevalent over the study area, particularly evident from May to September, driven by the pressure gradient between the subtropical high-pressure belt and lower-pressure systems over the eastern Mediterranean and Middle East (Xoplaki et al., 2004). Wind speeds are generally lower across the basin during this period, typically around 4.5 m/s, although stronger winds persist over regions such as the Aegean Sea and the Gulf of Lion.



Source: Soukissian & Sotiriou, 2022

Figure 9-9: Mean monthly wind speed and direction for May, August, September and December

From autumn to winter, the atmospheric regime undergoes a substantial transition. The weakening and southward retreat of the subtropical high-pressure systems allow the increased penetration of mid-latitude disturbances into the Mediterranean. At the same time, the southward displacement of the Polar Front Jet enhances cyclonic activity throughout the basin (Lionello et al., 2006). Numerous Mediterranean cyclones develop over the Gulf of Genoa, Adriatic Sea and Tyrrhenian Sea. These low-pressure systems generate stronger and more variable winds, with rapid changes in direction and intensity associated with frontal passages (Xoplaki et al., 2004; Burlando et al., 2009). Regional wind systems such as the warm



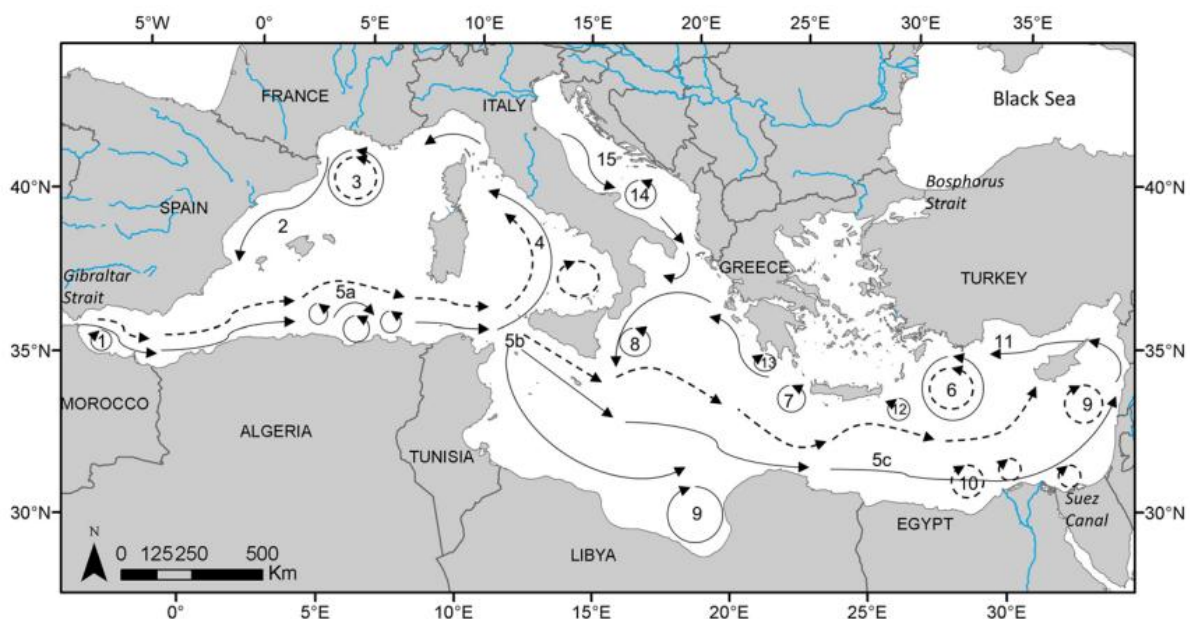
southeasterly Sirocco and the cold northeasterly Bora may further modulate the local wind field during this period.

This seasonal transition is reflected in the wind climatology in Figure 9-9. From November to April, higher wind speeds are observed throughout the Mediterranean Basin, reaching their maximum values during winter, particularly in February. During this period, average wind speeds over most of the basin are around 7 m/s, with the highest values occurring in the Aegean Sea and the Gulf of Lion. This period broadly overlaps the proposed Asopus-1 drilling window and therefore represents the representative metocean conditions used for the primary spill assessment.

In contrast, from May to September, wind speeds decrease considerably across the basin, although relatively stronger winds remain in these same regions. October represents a transition month, when wind speeds begin to increase again throughout the Mediterranean, marking the onset of the winter circulation regime.

The seasonal variability of the wind regime plays a major role in controlling the ocean circulation of the Mediterranean. At the basin scale, the Mediterranean circulation is anti-estuarine, with relatively fresh Atlantic Water entering through the Strait of Gibraltar and flowing eastward across the Mediterranean surface layer (Pinardi and Masetti, 2000).

In the Central Mediterranean, the eastward flow of Atlantic Water forms the Atlantic-Ionian Stream (AIS; Figure 9-10: 5b), which enters the Ionian Sea through the Strait of Sicily and constitutes the main surface current connecting the western and eastern Mediterranean basins (Pinardi and Masetti, 2000). Within the Ionian Sea, the interaction between wind forcing, bathymetry, and density gradients generates a complex circulation pattern characterized by semi-permanent cyclonic and anticyclonic gyres, including the Western Ionian Gyre and the Pelops Gyre. These structures promote recirculation and influence the transport pathways of surface waters throughout the basin. The Ionian circulation is closely connected to the Adriatic Sea through the Strait of Otranto. In the Adriatic, a dominant cyclonic circulation is observed, with northward flow along the eastern coast and southward flow along the Italian coast through the Western Adriatic Coastal Current (Figure 9-10: 15). The Southern Adriatic Gyre plays a key role in the exchange of water masses between the Adriatic and Ionian Seas, contributing to the regional circulation and transport processes (Pinardi and Masetti, 2000).





**Figure adapted from Pinardi and Masseti (2000). Source: Mannocci et al., 2018**

Figure 9-10: Map of main surface currents and gyres in the Mediterranean Sea. Dashed arrows represent summer circulation, plain arrows represent winter circulation. (1) Western Alborán gyre; (2) Ligurian-Provençal current; (3) Lions Gyre; (4) Thyrrenian cyclonic circulation with summer weakening and eastern anticyclone; (5a) Algerian current and eddies, (5b) Atlantic Ionian stream and (5c) mid-Mediterranean jet; (6) Rhodes gyres; (7) Western Cretan gyre; (8) Western Ionian gyre; (9) Gulf of Sirte anticyclone; (10) Shikmona and Mers a-Matruh gyres; (11) Sicilian and Asia Minor current; (12) Iera-Petra gyre; (13) Pelops gyre; (14) Southern Adriatic gyre; (15) Western Adriatic coastal current.

## 9.7.4 Material and method

### 9.7.4.1 Model presentation

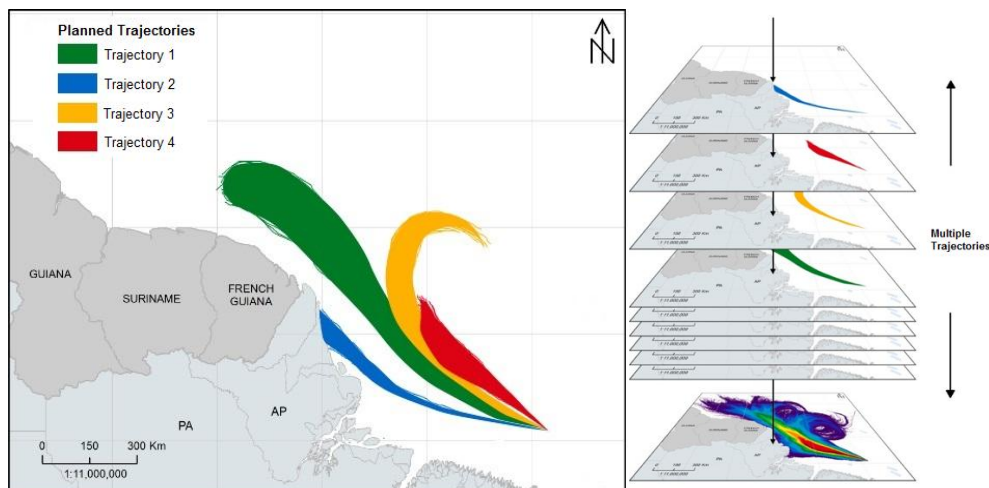
OSCAR (Oil Spill Contingency and Response) is a model developed by SINTEF for simulating oil spill fate at sea. It evaluates the transport, weathering and fate of oil at the sea surface, within the water column and along shorelines.

The underlying modelling study included both a subsea blowout case and an instantaneous 350 m<sup>3</sup> MGO surface-spill scenario. Only the MGO surface-spill scenario is presented and relied upon in this ESIA chapter as the representative environmental release scenario.

Currents and winds are input as time-varying grids generated by oceanographic and atmospheric models. OSCAR supports both deterministic and stochastic simulations. Deterministic simulations represent spill behaviour over a specified time period, while stochastic modelling combines multiple simulations under different wind and current conditions to generate probabilistic outputs for oil transport and fate.

### 9.7.4.2 Stochastic approach

In the stochastic approach, several deterministic simulations are performed, considering all the weathering processes, in different scenarios of currents and winds, i.e., the stochastic approach investigates the behaviour of the oil under the influence of an extensive combination of environmental scenarios and determines the statistics (probability, time of arrival, etc.) in each model domain region. Figure 9-11 illustrates how a stochastic outcome (d) is calculated from n deterministic cases (trajectories 1, 2, 3 and 4). The stochastic model results are of great importance because they illustrate both the extent of the area possibly affected by the release and the minimum arrival time of the pollutant at each location with the probability of that location being reached, as well as identifying the regions with higher probability of being reached in different scenarios.



**Figure 9-11: Examples of four individual spill trajectories for a generic release scenario (left panel). Hundreds of individual trajectories overlap each other, as shown at right to calculate stochastic results (probability, minimum arrival times, maximum mass of stranded oil at the coast, etc.)**

### 9.7.4.3 Deterministic approach

Once the stochastic simulations had been completed, two deterministic sensitivity simulations were selected for the 350 m<sup>3</sup> MGO surface-spill scenario. These represented the Minimum Arrival Time to Shore and Maximum Mass on Shore cases identified within the Season 2 stochastic simulation set. The deterministic simulations are retained as supplementary sensitivity cases and do not replace the Season 1 stochastic results as the primary assessment basis.

Oil weathering and fate are presented for each deterministic sensitivity simulation through time-series graphs and mass-balance tables.

## 9.7.5 Scenario parameters

The simulations were performed considering marine gas oil for the surface release. For the surface spill, an instantaneous release of 2,201 bbl (350 m<sup>3</sup>) was considered. This scenario represents a loss of containment from a fuel tank onboard a PSV operating in support of the drilling campaign and has been adopted as the representative accidental release scenario for ESIA purposes.

## 9.7.6 Modelling parameters

### 9.7.6.1 OSCAR model parameters

OSCAR model parameters used in the study are presented in Table 9-20. In the OSCAR model, up to 30,000 particles can be used to represent the undissolved fraction of the oil and another 30,000 to represent the dissolved fraction. In the present study, it was chosen to use 20,000 for each type, totaling 40,000 particles.

This value was defined based on sensitivity tests with successive increases in the number of particles, which showed that results remain unchanged from 10,000 particles onward (5,000 undissolved and 5,000 dissolved). The distribution of particle diameters and masses is handled internally by the OSCAR model.

**Table 9-20: OSCAR model parameters used in the study**

| Model parameters                                     |                                             |                |             |
|------------------------------------------------------|---------------------------------------------|----------------|-------------|
| Particles number                                     | Non-dissolved                               | 20,000         |             |
|                                                      | Dissolved                                   | 20,000         |             |
| Grid Dimensions                                      | Zonal                                       | 2,000          | km          |
|                                                      | Meridional                                  | 1,800          | km          |
| Grid Resolution                                      | X direction (longitude)                     | 2,000          | m           |
|                                                      | Y direction (latitude)                      | 2,000          | m           |
|                                                      | Z direction (depth)<br>(first layer/others) | 2/10 (surface) | m           |
| Depth for concentration grid                         | Min:                                        | 0              | m           |
|                                                      | Max:                                        | 202 (surface)  | m           |
| Dissolved concentration threshold<br>in water column |                                             | 0.058          | ppm         |
| Time step                                            | Model calculation                           | 15             | min         |
|                                                      | Output                                      | 60             | min         |
| Simulation duration                                  | Surface                                     | 30             | days        |
| Number of simulations in stochastic<br>model         |                                             | 500            | Each season |

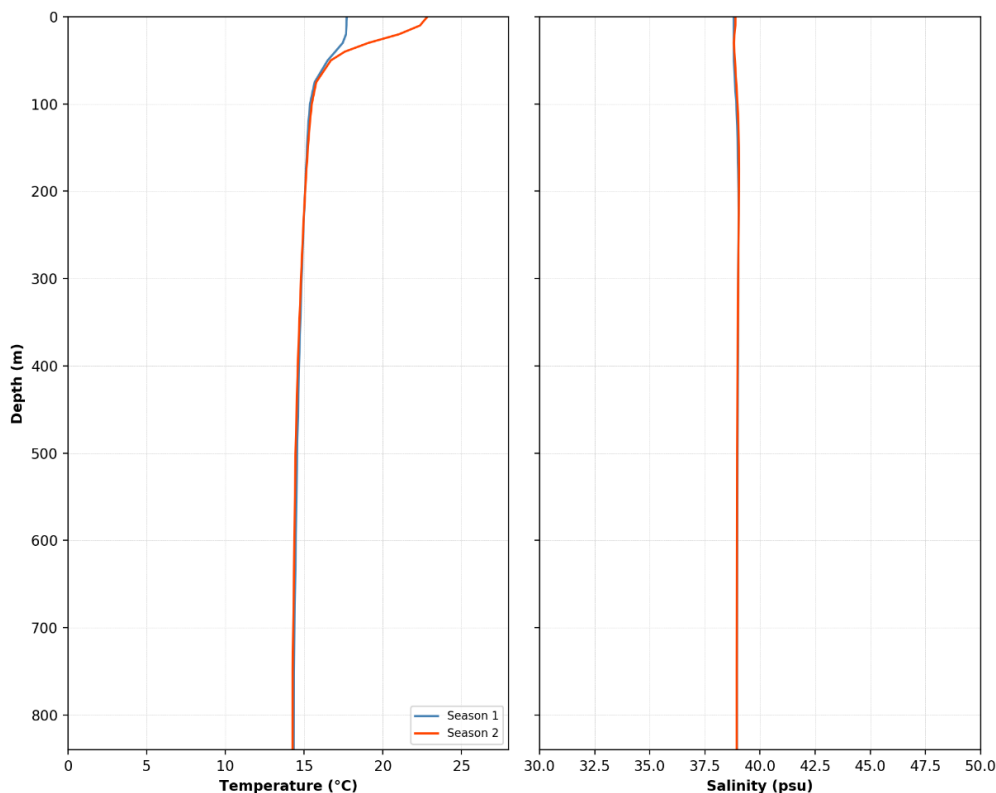
Table 9-21 presents the oil properties used in the simulations for the surface spill. A marine gas oil (MGO) is expected, and the MGO 500 PPM oil from the OSCAR database was selected as a representative case.

**Table 9-21: Characteristics of the oil used in the simulations**

| Oil Properties | Marine Gas Oil |                   |
|----------------|----------------|-------------------|
| Parameter      | Value          | Unity             |
| Spec. Gravity  | 0.852          | g/cm <sup>3</sup> |
| Viscosity      | 6 (@ 10°C)     | cP                |
| Pour point     | -36            | °C                |
| Wax Content    | 0.81           | %                 |
| Asphaltenes    | 0.02           | %                 |

### 9.7.6.2 Environmental data

The temperature and salinity profile data used in the modelling are presented in Figure 9-12. Data from the CMEMS (Copernicus Marine Environment Monitoring Service) model were used, with seasonal variations considered.



**Figure 9-12: Temperature and salinity profiles in the water column at the release site for each season: Season 1, from October to March; and Season 2 from April to September.**

### 9.7.6.3 Metocean data set

To represent the metocean conditions in the study area, ocean current fields were obtained from the Copernicus Marine Service Mediterranean Sea Physics Analysis and Forecast product (Copernicus Marine Service - CMEMS), which provides hydrodynamic data at a horizontal resolution of  $1/24^\circ$  and a temporal resolution of 3 h. Wind data were obtained from the ERA5 (ECMWF Reanalysis v5) atmospheric reanalysis produced by the European Centre for Medium-Range Weather Forecasts (ECMWF). ERA5 provides globally consistent meteorological fields with an hourly temporal resolution and a horizontal resolution of approximately 0.25.

#### 9.7.6.3.1 Winds

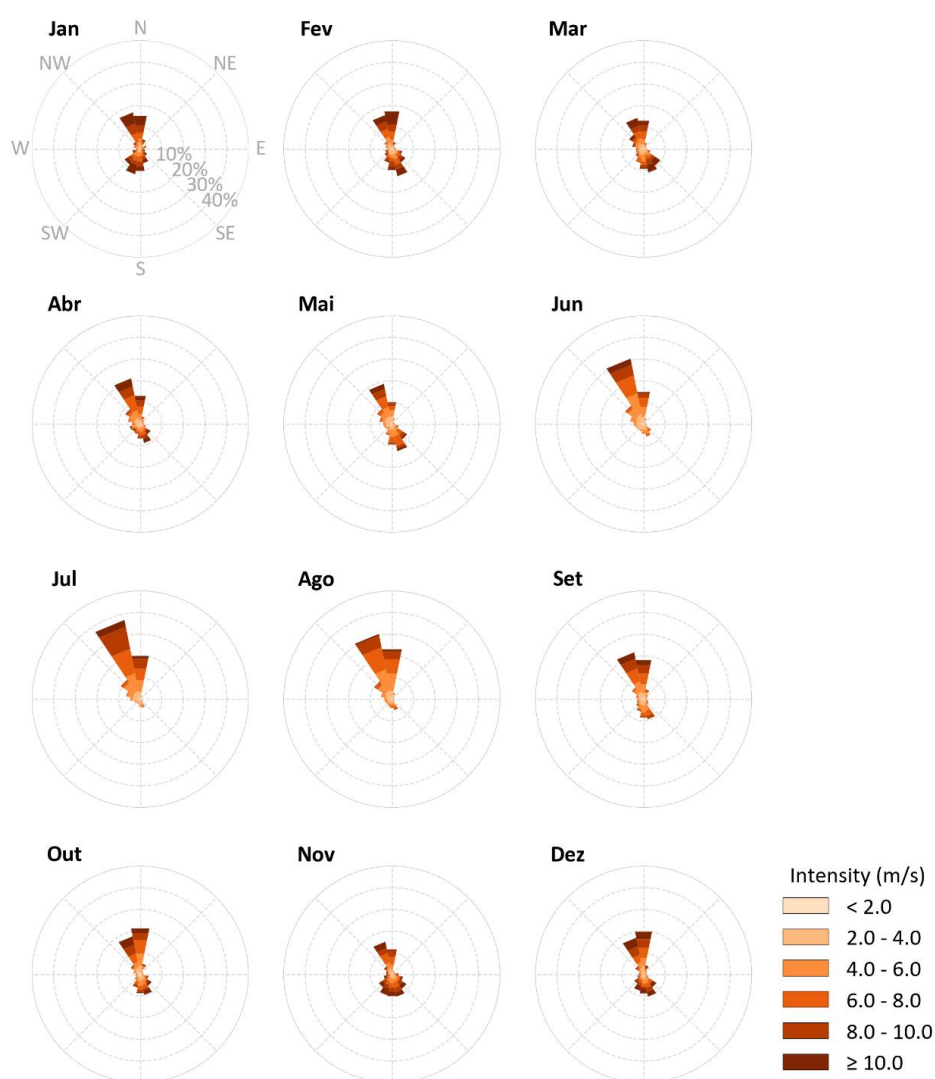
As described (Section 9.7.3.2), the study area is directly influenced by the seasonal atmospheric variability of the Central Mediterranean, resulting from the interaction between the Azores High during the warm season and the increased cyclonic activity associated with mid-latitude disturbances during the cold season. Consequently, two representative seasons were defined for the oil spill simulations:

- Season 1 (October to March): corresponds to the winter circulation regime, characterized by stronger and more variable winds, enhanced cyclonic activity, and average wind speeds around 7 m/s across much of the Mediterranean Basin.
- Season 2 (April to September): represents the summer circulation regime, dominated by the eastward

expansion of the Azores High, resulting in more stable atmospheric conditions, prevailing north-westerly winds over the Ionian Sea, and lower average wind speeds, typically around 4.5 m/s.

As the planned Asopus-1 drilling campaign is expected to occur during Season 1, the Season 1 results are used as the primary basis for interpretation of spill behaviour, while Season 2 is retained as a sensitivity case.

From the ERA5 (ECMWF) data, wind diagrams for each month from 2021 to 2025 are presented in Figure 9-13. Also, Table 9-22 below shows the occurrence of wind direction, while Table 9-23 shows the occurrence of wind intensity. Finally, Figure 9-14 presents the wind diagrams for each season. It is observed that the prevailing winds in both seasons are from NNW. In Season 2 (April to September) wind speeds are about 2 - 6 m/s, whereas Season 1 (October to March) shows a greater occurrence of higher wind speeds, above 6 m/s and a greater contribution of winds from the N.



**Source: ERA5 (ECMWF)**

**Figure 9-13: Wind diagrams at the release site for each month, from 2021 to 2025**

**Table 9-22: Occurrence of wind direction (%) at the release site for each month, from 2021 to 2025**

| DIRECTION | MONTHS |       |       |       |       |       |       |       |       |       |       |       |
|-----------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|           | J      | F     | M     | A     | M     | J     | J     | A     | S     | O     | N     | D     |
| N         | 15,51  | 17,7  | 13,23 | 13,25 | 10,24 | 15,11 | 20,38 | 23,47 | 18,47 | 21,61 | 11,75 | 20,08 |
| NNE       | 4,6    | 3,25  | 2,88  | 3,58  | 2,82  | 2,78  | 1,8   | 3,01  | 4,69  | 4,97  | 1,92  | 4,33  |
| NE        | 1,4    | 1,24  | 1,75  | 2,11  | 1,16  | 1,08  | 0,65  | 1,32  | 2,56  | 1,8   | 1,5   | 2,04  |
| ENE       | 2,96   | 1,68  | 1,37  | 1,58  | 1,05  | 1,14  | 0,19  | 0,94  | 1,64  | 1,37  | 1,5   | 1,16  |
| E         | 1,96   | 1,95  | 1,61  | 1,94  | 1,21  | 1,11  | 0,4   | 0,7   | 1,14  | 1,42  | 3,03  | 1,42  |
| ESE       | 2,34   | 4,88  | 3,2   | 2,67  | 3,15  | 1,53  | 0,54  | 0,83  | 2,31  | 3,87  | 5,28  | 2,42  |
| SE        | 3,84   | 7,54  | 9,38  | 5,72  | 8,52  | 4,28  | 1,56  | 1,48  | 2,75  | 6,4   | 8,11  | 7,2   |
| SSE       | 6,75   | 12,88 | 11,16 | 8,94  | 12,77 | 5,92  | 4,01  | 5,13  | 9,47  | 9,7   | 10,53 | 10,48 |
| S         | 10,32  | 9,87  | 9,3   | 6,75  | 9,6   | 4,5   | 3,39  | 4,09  | 8,61  | 8,84  | 10,22 | 8,95  |
| SSW       | 11,94  | 6,47  | 6,64  | 4,81  | 5,38  | 3,53  | 2,26  | 3,44  | 5,83  | 6,29  | 9,89  | 7,77  |
| SW        | 8,74   | 4,05  | 4,52  | 4,36  | 3,06  | 3,22  | 2,39  | 2,98  | 4,14  | 2,98  | 7,28  | 5,13  |
| WSW       | 3,66   | 3,1   | 3,6   | 4,94  | 3,71  | 3,75  | 2,88  | 3,28  | 3,19  | 2,07  | 3,89  | 2,88  |
| W         | 1,85   | 2,28  | 3,33  | 3,75  | 4,14  | 4,64  | 4,73  | 3,52  | 2,86  | 2,18  | 2,53  | 2,23  |
| WNW       | 2,98   | 2,98  | 5,38  | 5,78  | 5,91  | 6,33  | 6,69  | 5,19  | 3,67  | 3,28  | 2,83  | 2,1   |
| NW        | 3,95   | 4,2   | 8,06  | 8,28  | 8,33  | 10,28 | 10,83 | 9,87  | 6,58  | 5,3   | 4,39  | 4,57  |
| NNW       | 17,2   | 15,93 | 14,6  | 21,53 | 18,95 | 30,81 | 37,31 | 30,75 | 22,08 | 17,9  | 15,36 | 17,23 |

Source: ERA5 (ECMWF)

Note: The maximum values for each month are highlighted in pink

Table 9-23: Occurrence of wind intensity (%) at the release site for each month, from 2021 to 2025

| MONTHS | INTENSITY (M/S) |       |       |       |       |       |
|--------|-----------------|-------|-------|-------|-------|-------|
|        |                 |       |       |       |       |       |
| Jan    | 5,73            | 14,11 | 17,12 | 20,78 | 19,33 | 22,93 |
| Feb    | 9,84            | 21,69 | 15,93 | 16,4  | 18,29 | 17,85 |
| Mar    | 9,03            | 22,9  | 21,08 | 17,77 | 13,58 | 15,65 |
| Apr    | 8,81            | 22,94 | 22,53 | 20,92 | 13,92 | 10,89 |
| May    | 10,54           | 27,07 | 26,26 | 20,67 | 9,54  | 5,91  |
| Jun    | 12,61           | 28,5  | 30,39 | 17,42 | 7,64  | 3,44  |
| Jul    | 9,11            | 22,66 | 28,31 | 19,46 | 15,94 | 4,52  |
| Aug    | 8,15            | 25,22 | 31,83 | 22,18 | 10,83 | 1,8   |
| Sep    | 11,53           | 24,25 | 25,14 | 20,03 | 12,5  | 6,56  |
| Oct    | 12,39           | 21,45 | 22,39 | 19,65 | 12,45 | 11,67 |



| MONTHS | INTENSITY (M/S) |       |       |       |       |       |
|--------|-----------------|-------|-------|-------|-------|-------|
|        |                 |       |       |       |       |       |
| Nov    | 8,5             | 17,17 | 18    | 20,64 | 17,19 | 18,5  |
| Dec    | 7,23            | 19,62 | 19,57 | 19,03 | 15,73 | 18,82 |

Source: ERA5 (ECMWF)

Note: The maximum values for each month are highlighted in pink

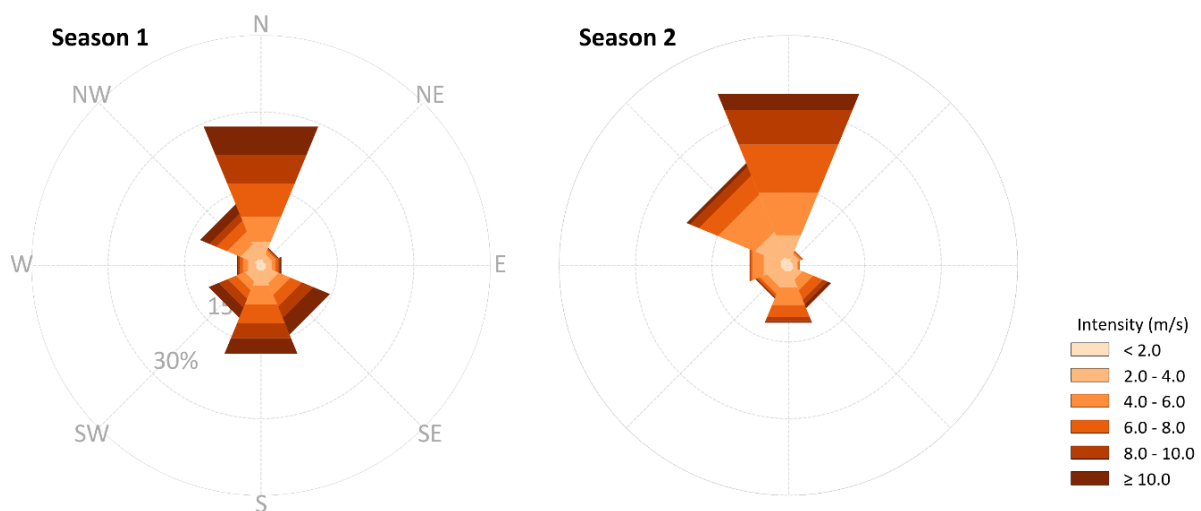


Figure 9-14: Wind diagrams at the release site for each season, from 2021 to 2025: Season 1, from October to March; and Season 2, from April to September

#### 9.7.6.3.2 Currents

From the CMEMS data, current diagrams for each month from 2021 to 2025 are presented in Figure 9-15. Table 9-24 shows the occurrence of current direction. Table 9-25 shows the occurrence of current intensity.

At the release point, currents during the representative Season 1 period are predominantly directed towards the west (W) and west-southwest (WSW), with most occurrences showing intensities between 0.1 and 0.2 m/s. Season 2 results are presented as a sensitivity case.

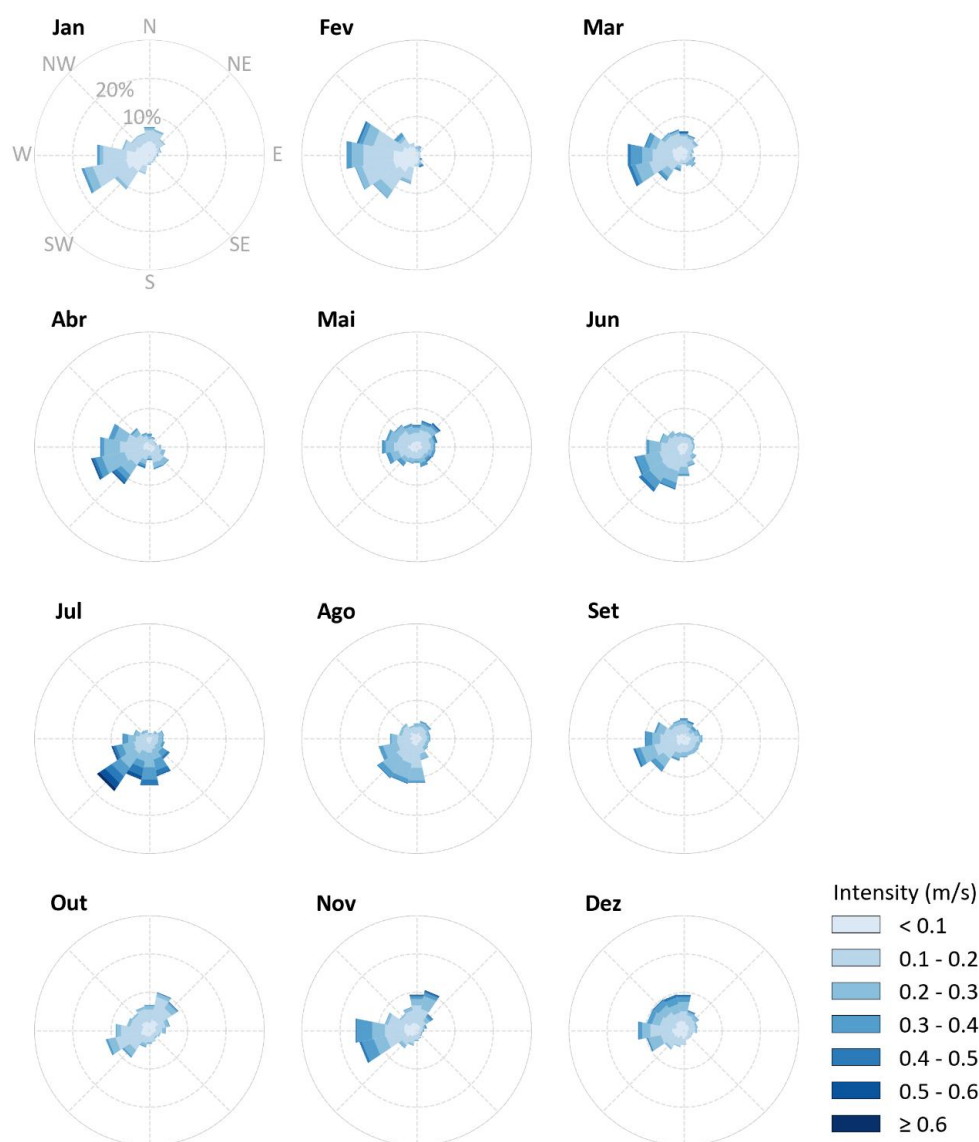


Figure 9-15: Surface current diagrams at the release site for each month, from 2021 to 2025

Table 9-24: Occurrence of surface current direction (%) at the release site for each month, from 2021 to 2025

| Direction | Months |      |      |      |      |      |      |      |      |       |       |      |
|-----------|--------|------|------|------|------|------|------|------|------|-------|-------|------|
|           | J      | F    | M    | A    | M    | J    | J    | A    | S    | O     | N     | D    |
| N         | 7,38   | 2,24 | 6,28 | 3,52 | 5,85 | 3,55 | 1,48 | 4,08 | 5,38 | 6,82  | 9,57  | 9,48 |
| NNE       | 6,79   | 2,45 | 5,37 | 2,72 | 7,01 | 3,38 | 1,58 | 4,78 | 4,85 | 10,23 | 10,79 | 5,45 |
| NE        | 4,97   | 1,5  | 4,54 | 1,89 | 7,57 | 3,3  | 2,5  | 4,59 | 3,99 | 9,15  | 5,24  | 4,83 |
| ENE       | 3,14   | 0,91 | 2,77 | 2,02 | 5,58 | 2,91 | 3,92 | 3,65 | 4,36 | 5,5   | 2,77  | 3,76 |
| E         | 2,31   | 0,8  | 2,15 | 3,13 | 4,94 | 2,83 | 3,68 | 3,62 | 4,91 | 4,32  | 2     | 3,54 |
| ESE       | 1,8    | 1,09 | 3,09 | 4,27 | 5,02 | 2,66 | 4,08 | 3,33 | 4,49 | 3,01  | 1,58  | 2,42 |
| SE        | 1,85   | 1,8  | 3,79 | 6,13 | 4,83 | 3,99 | 6,44 | 3,65 | 4,66 | 2,55  | 1,72  | 2,42 |
| SSE       | 2,17   | 3,36 | 3,01 | 6,02 | 5,4  | 5,35 | 9,99 | 5,74 | 4,55 | 3,14  | 2,22  | 2,55 |

| Direction | Months |       |       |       |      |       |       |       |       |       |       |       |
|-----------|--------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|
|           | J      | F     | M     | A     | M    | J     | J     | A     | S     | O     | N     | D     |
| S         | 2,6    | 3,07  | 2,42  | 3,52  | 4,27 | 7,77  | 12,38 | 11,7  | 4,91  | 3,57  | 2,8   | 3,73  |
| SSW       | 5,15   | 7,76  | 4,35  | 5,74  | 4,54 | 11,43 | 10,95 | 12,03 | 5,96  | 4,51  | 4,08  | 4,46  |
| SW        | 10,87  | 13,72 | 8,11  | 11,79 | 6,15 | 14,17 | 16,51 | 12,46 | 10,37 | 8,56  | 5,6   | 6,04  |
| WSW       | 18,09  | 16,38 | 14,82 | 15,53 | 8,13 | 13,2  | 10,09 | 10,12 | 13,45 | 11,65 | 15,26 | 9,88  |
| W         | 13,91  | 18,65 | 14,9  | 13,07 | 9,18 | 9,96  | 7,14  | 7,03  | 10,32 | 8,94  | 16,17 | 12,13 |
| WNW       | 7,28   | 15,93 | 10,55 | 10,87 | 8,24 | 6,44  | 4,24  | 4,75  | 7,93  | 6,04  | 8,46  | 9,85  |
| NW        | 5,8    | 7,08  | 7,06  | 5,96  | 7,03 | 5,05  | 2,63  | 4,86  | 4,83  | 5,56  | 5,38  | 9,83  |
| NNW       | 5,88   | 3,25  | 6,82  | 3,8   | 6,26 | 3,99  | 2,39  | 3,6   | 5,02  | 6,44  | 6,35  | 9,64  |

**Note: The maximum values for each month are highlighted in pink**

**Table 9-25: Occurrence of surface current intensity (%) at the release site for each month, from 2021 to 2025**

| Months | Intensity (m/s) |           |           |           |           |       |
|--------|-----------------|-----------|-----------|-----------|-----------|-------|
|        | < 0.1           | 0.1 - 0.2 | 0.2 - 0.3 | 0.3 - 0.4 | 0.4 - 0.5 | ≥ 0.5 |
| Jan    | 49,88           | 40,7      | 6,9       | 1,66      | 0,7       | 0,16  |
| Feb    | 38,62           | 40,87     | 14,1      | 4,96      | 1,45      | -     |
| Mar    | 28,67           | 41,64     | 17,64     | 8,38      | 3,3       | 0,38  |
| Apr    | 19,06           | 42,33     | 25,94     | 8,49      | 3,08      | 0,92  |
| May    | 23,36           | 41,18     | 22,44     | 9,15      | 3,06      | 0,78  |
| Jun    | 22,22           | 42,05     | 24,63     | 9,04      | 2,02      | 0,03  |
| Jul    | 11,57           | 30,82     | 27,54     | 16,91     | 8,4       | 3,6   |
| Aug    | 23,28           | 43,33     | 26,12     | 6,42      | 0,78      | 0,08  |
| Sep    | 25,8            | 42        | 22,44     | 7,74      | 2,02      | -     |
| Oct    | 30,9            | 51,65     | 14,15     | 2,85      | 0,27      | 0,19  |
| Nov    | 26,19           | 42,47     | 17,7      | 10,51     | 2,08      | 0,64  |
| Dec    | 31,76           | 39,57     | 18,79     | 7,46      | 2,07      | 0,32  |

**Note: The maximum values for each month are highlighted in pink**

#### 9.7.6.4 Description of grids

For the representative MGO surface-spill modelling, a regular grid was used with a spatial resolution of 2 km in the zonal and meridional directions and a vertical resolution of 10 m. An additional 2 m top layer was included to estimate the concentration of dispersed oil near the surface, following the standard configuration of the OSCAR model. The model grid extends from 8°02'E to 30°47'E in the zonal direction and from 29°46'N to 45°56'N in the meridional direction.

### 9.7.6.5 Bathymetry

The bathymetry used for oil spill modelling is from GEBCO (General Bathymetry Chart of the Oceans) with 30 seconds resolution, the same used for hydrodynamic modeling. Figure 9-16 presents the bathymetry input to the OSCAR model.

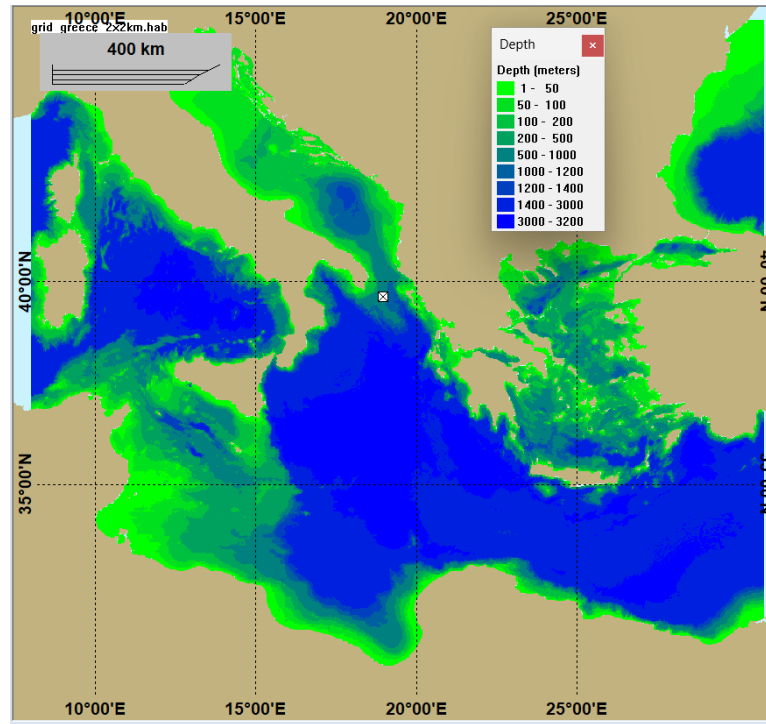


Figure 9-16: Bathymetry from GEBCO30" in the OSCAR grid

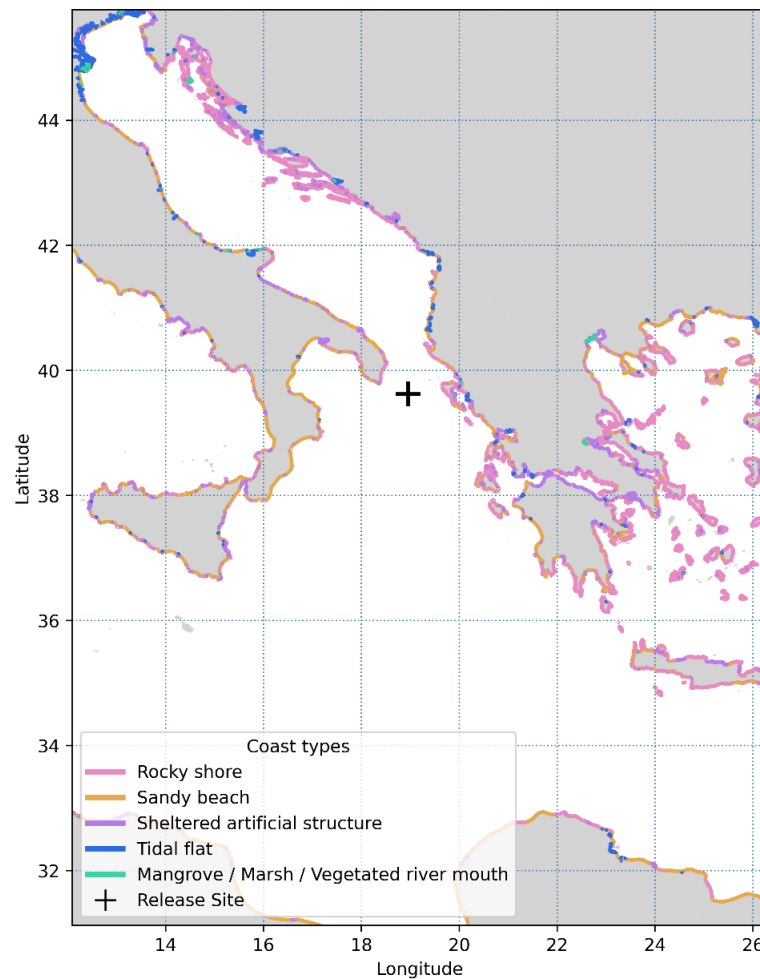
### 9.7.6.6 Coast classification

The oil-shoreline interactions in the OSCAR model are dependent on both the type of oil considered in the modelling and the type of shoreline. The type of shoreline considered will determine the highest oil-holding capacity at the model's grid points representing the shoreline.

For the study, a Global CoastLine Dataset (GCL\_FCS30) with a detailed classification system (Zuo et al., 2025) was used. The GCL\_FCS30 features a 30 m resolution and was developed using long-term Landsat imagery on the Google Earth Engine (GEE) platform. It is an open-access global coastline category dataset that covers high latitudes in a continuous, smooth line-vector format.

For the broader modelling domain, five coastline categories were represented within the shoreline classification dataset (Figure 9-17):

- Rocky shore;
- Sandy beach;
- Sheltered artificial structure;
- Tidal flat;
- Mangrove / Marsh / Vegetated river mouth.



Source data: Zuo et al., 2025

Figure 9-17: Coast types considered for the simulations

#### 9.7.6.7 Thresholds used in the model

The thresholds used in modelling were:

- Surface: a threshold of 0.3  $\mu\text{m}$  oil thickness was adopted, corresponding to oil with a rainbow sheen appearance resulting from light interference at the oil–air and oil–water interfaces, as defined by the Bonn Agreement Oil Appearance Code (BAOAC). This threshold was selected as a conservative value below the thickness associated with a lethal dose to exposed wildlife (10  $\mu\text{m}$ ), according to French McCay (2009).
- Water column: a threshold of 0.058 ppm was used based on the Norwegian Oil Industry Association (OLF, 2008) guideline for assessing the risk of acute oil pollution effects on fish. The value corresponds to the acute exposure threshold proposed by Neilson et al. (2005, as cited in OLF, 2008) for various aquatic species exposed to dispersed oil.
- Shoreline oiling: a threshold of 1  $\text{g}/\text{m}^2$  was adopted to identify coastal segments affected by stranded oil. This value represents the lower limit commonly associated with recreational restrictions and cleanup activities and has been used to quantify shoreline oiling above levels of concern for socioeconomic and

environmental receptors (National Oceanic and Atmospheric Administration, 2013; Owens and Sergy, 2000).

#### 9.7.6.8 Modelling limitations

Numerical models are tools that aim to represent the dynamics and processes involved in the object of study through mathematical equations and parametrizations. Models generate results that are approximations of the real state and have limitations and errors inherent to the method (e.g., truncation error, approximation error and parameterization of unresolvable physical processes). All these sources contribute to divergences between the real and simulated state of the ocean. Despite all the uncertainties, the model and the approach used are widely accepted internationally (see for instance: Keramea et al., 2021) and the results generated can satisfactorily describe the hydrodynamics and processes of dispersion of constituents when evaluated by different sources of data collected in the domain.

In studies of hydrodynamic modelling and oil dispersion, it is necessary that the study meets specific requirements:

- that it has sufficient domain so that the oil does not leave its limits (or that if it does, it must be with very low probability values);
- have spatial and temporal resolution capable of resolving features and phenomena of different scales;
- have a three-dimensional representation of oil in the marine environment, solve the transport and dispersion of oil on the surface, in droplets and dissolved in water, and solve all the oil weathering processes;
- that the number of oil dispersion modelling simulations represents the environmental variability of the study region.

Thus, assumptions are necessary so that the computational effort in the representation of phenomena at different scales in the results of each study is evaluated so that all these requirements can be met. The interpretation of the results must be done in the light of these adopted assumptions and model uncertainties.

The grid resolution of the hydrodynamic model can directly influence the resolution adopted in the oil transport and dispersion model, since the advection and diffusion calculations rely on hydrodynamic variables – such as currents – provided by the hydrodynamic simulation. As a result, the spatial accuracy of the oil model is inherently constrained by the resolution of the underlying hydrodynamic fields, limiting its ability to adequately represent small-scale coastal processes, such as recirculation zones, tidally induced currents in shallow areas, and local interactions with seabed topography.

It is important to note that the hydrodynamic datasets used in this study were obtained from internationally recognised regional modelling products (CMEMS and ERA5) and were not subject to project-specific calibration using local in situ measurements at the release location. While this may limit the representation of certain fine-scale local processes, the datasets are widely used for regional-scale oil spill modelling and are considered appropriate for assessment of spill transport and fate at the scale of the present study.



## 9.7.7 Modelling results

Stochastic results were based on 500 individual simulations for Season 1 (October–March) and Season 2 (April–September), distributed between 2020 and 2024 (inclusive), totalling 1,000 simulations. Each of these individual trajectories considers different environmental conditions (currents and winds) and all the trajectories corresponding to one scenario are aggregated to form stochastic results maps.

The following maps relating to the stochastic results are presented:

- Probability of oil on the sea surface – These maps define the area on the sea surface and the associated probability in which oiling is expected to exceed the threshold of 0.3  $\mu\text{m}$ .
- Minimum arrival time at surface – These maps define the area on the sea surface and the associated minimum arrival time in which oiling is expected to exceed the threshold of 0.3  $\mu\text{m}$ .
- Probability of oil in the water column – These maps define the area and the associated probability of having concentrations greater than 0.058 ppm. Three maps and two images of the vertical latitudinal profile of oil were presented. One map presented is the maximum probability of water-column oil concentrations exceeding 0.058 ppm, another map of probability of contamination in layers of interest and a third map of oil concentration. The layer was chosen after analyzing the vertical profile of dissolved oil concentrations and include the near-surface layer (approximately 2 m below the surface) below the surface.
- Probability of oil at shore – These maps show the maximum probability at shore where oil exceeds the threshold of 1  $\text{g}/\text{m}^2$ , as defined for each modelling grid point (Section 9.7.6.7).
- Minimum arrival time at shore – These show the minimum arrival time at shore which oiling is expected to exceed the threshold of 1  $\text{g}/\text{m}^2$ .

The selection strategy for the deterministic scenarios was based on the most critical conditions identified in the stochastic simulations, specifically those presenting the shortest oil arrival time and the greatest oil mass reaching the coastline.

### 9.7.7.1 Stochastic Simulation

This section presents the stochastic modelling results for the representative 350  $\text{m}^3$  MGO surface-spill scenario for both Season 1 and Season 2. Season 1 corresponds to the proposed drilling window and is therefore the primary basis for interpretation, while Season 2 is retained as a sensitivity case. Results are presented for the sea surface, water column and shoreline, together with the associated mass balance. The underlying modelling study also included a subsea blowout case. Those results are not presented or relied upon in this chapter because the sustained uncontrolled subsea blowout is not adopted as the representative environmental release scenario for the ESIA following incorporation of the project-specific E-SID barrier.

Unless otherwise stated, the modelling results presented below represent the unmitigated transport and fate of the released MGO and do not account for oil spill detection, containment, recovery or other response measures. The results therefore provide the basis for impact assessment and emergency-response planning rather than a prediction of residual impacts following implementation of the project's oil spill response arrangements.

In the instantaneous surface spill scenario of Marine Gas Oil (MGO), considering a total release volume of 350 m<sup>3</sup>, surface oil drift can be observed in all directions from the spill location in both seasons. This behavior reflects the regional circulation pattern, which includes both northward and southward flows relative to the release point. No significant differences are observed between the two seasons, as MGO is a light refined product and the release is instantaneous, resulting in rapid weathering and evaporation. In both seasons, the areas with the highest probabilities of oil occurrence (>30%) are predominantly located southwest of the spill location, mainly influenced by the prevailing northerly winds and the westward and northwestward surface currents.

At the sea surface, the area with a probability of oil occurrence greater than 90% remains restricted to approximately 2 km from the release location in both seasons. For probabilities greater than 30%, the maximum extent is approximately 4 km in Season 1 and 8 km in Season 2.

Under the representative Season 1 conditions, the maximum modelled surface extent reaches approximately 122 km within six days; however, this outer extent is associated with the lowest probability of occurrence and should not be interpreted as the expected or high-probability spill footprint. The corresponding Season 2 sensitivity result reaches approximately 166 km within nine days. Within the first 72 hours, the maximum modelled surface extent is approximately 100 km in Season 1 and 89 km in Season 2, again corresponding to the outer, low-probability extent of the modelled trajectories.

Within the water column, the modelled area in Season 1 extends beyond the surface footprint, primarily within the upper 0–2 m layer. The maximum modelled extent reaches approximately 150 km from the release location, but this outer extent is associated with probabilities below 5%. Areas with probabilities greater than 30% extend to approximately 12.5 km from the release location in Season 1. The corresponding Season 2 sensitivity results extend to approximately 134 km at low probability and approximately 11.2 km at probabilities greater than 30%.

Oil concentrations above the threshold of 0.058 ppm are identified from the surface down to approximately 60 m in Season 1 and 45 m in Season 2. Higher concentrations (0.45 ppm) are observed down to approximately 30 m depth, following the same pattern in both seasons. The maximum concentrations recorded were 1.19 ppm in Season 1 and 1.041 ppm in Season 2, occurring at depths of approximately 10–20 m in both seasons.

In both seasons, the highest shoreline oiling probability occurs in Italy, reaching 5% in Season 1 and 12.2% in Season 2. The minimum travel time is also recorded in Italy during Season 1, at 2.8 days, whereas in Season 2 the shortest travel time is observed in Greece, at 2.2 days.

Regarding weathering processes after 30 days of simulation, the dominant fate process in Season 1 is oil dispersed within the water column, with a median value of 55%, followed by evaporation, with a median of 30%. In Season 2, oil dispersed within the water column and evaporation are also the dominant processes, with median values of 43% and 42%, respectively. Biodegraded oil is 11–12 % in both seasons. By the end of the 30-day simulation period, the maximum amount of stranded oil reaches 3.0% in Season 1 and 22.1% in Season 2, while less than 0.05% of the released oil remains at the sea surface in both seasons.

### 9.7.7.2 Surface Results

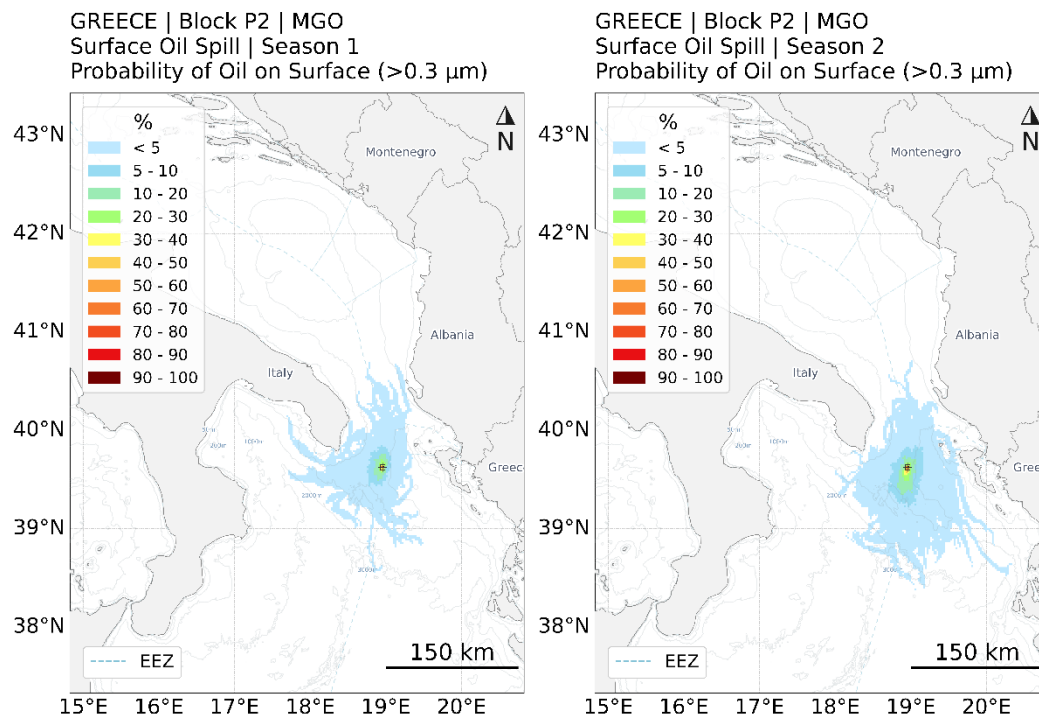


Figure 9-18: Probability of oil at sea surface ( $> 0.3 \mu\text{m}$ ) Surface Marine Gas Oil Spill. Season 1 (left) and Season 2 (right)

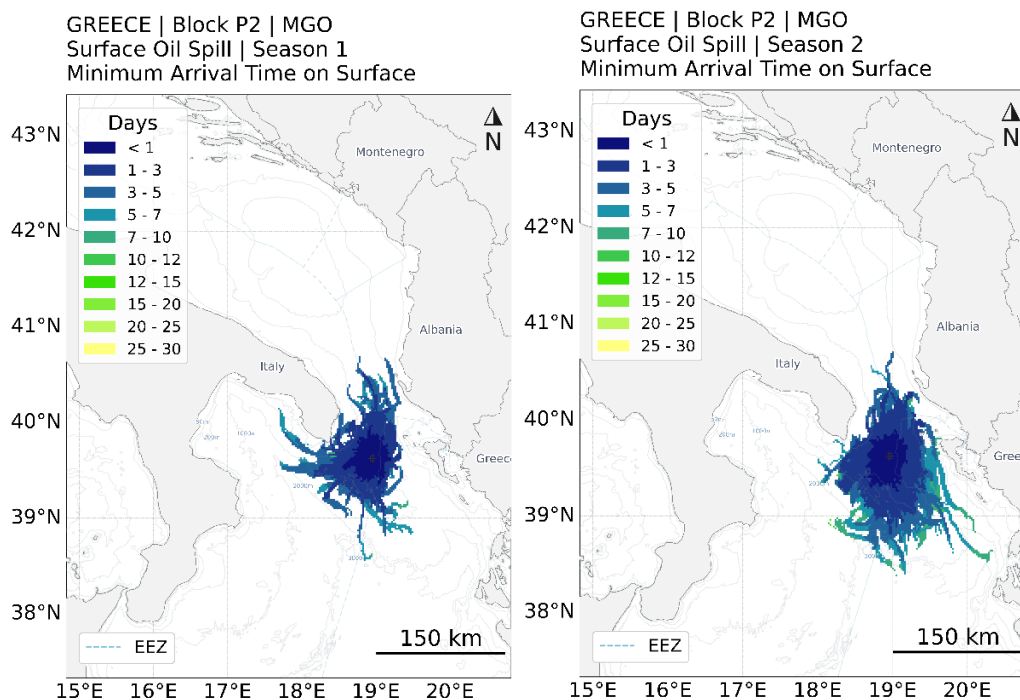
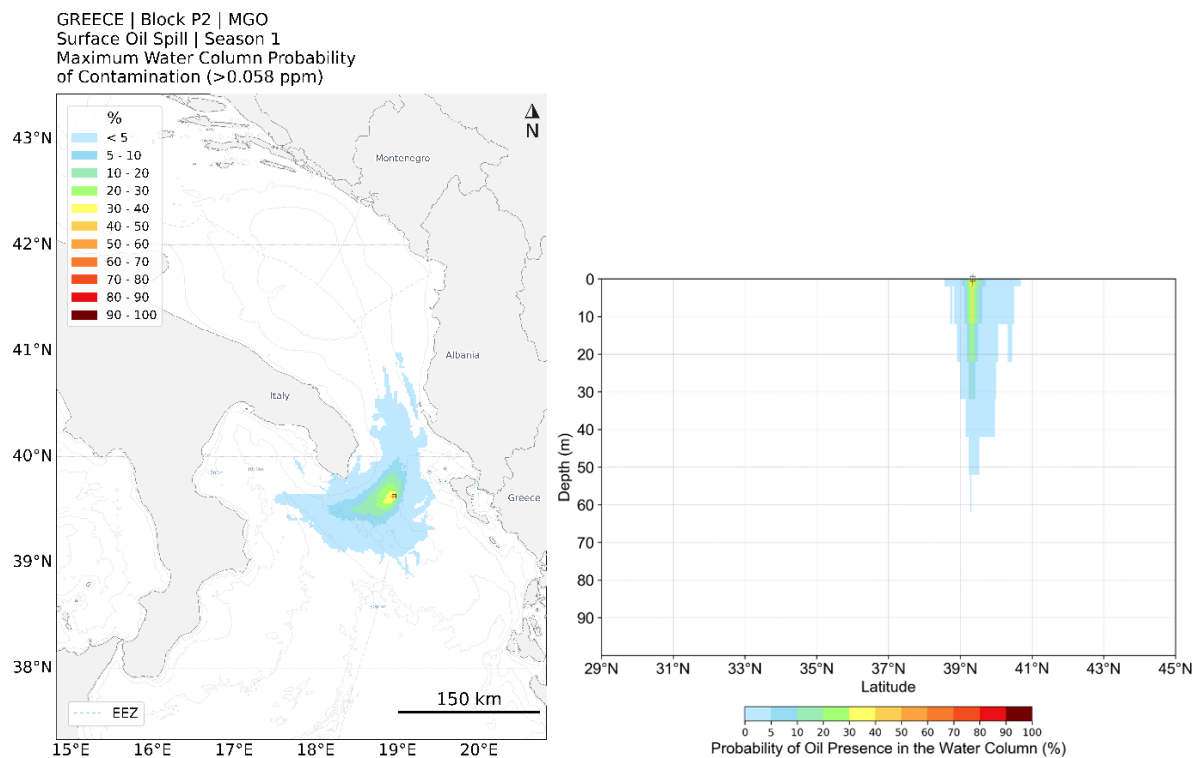
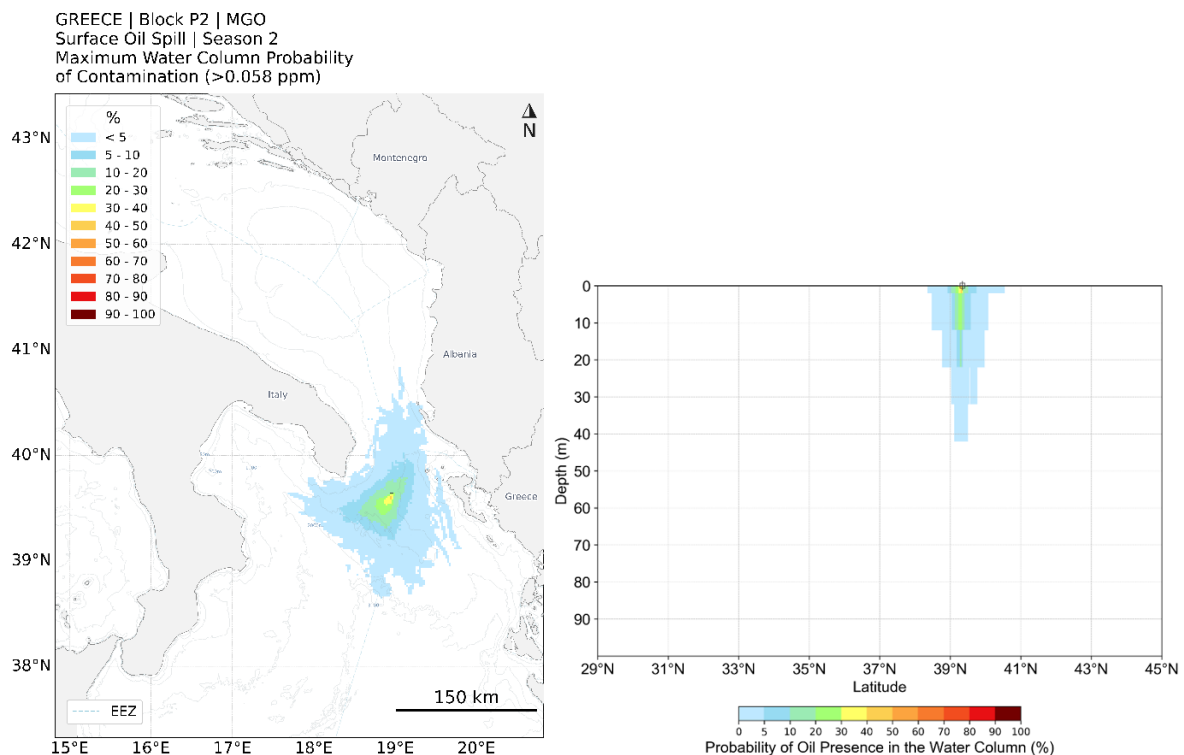


Figure 9-19: Minimum arrival time at the sea surface above the adopted surface-oil thickness threshold of  $0.3 \mu\text{m}$ . Surface Marine Gas Oil Spill. Season 1 (left) and Season 2 (right)

### 9.7.7.3 Water Column Results



**Figure 9-20: Maximum probability of water-column oil concentrations exceeding 0.058 ppm, including latitudinal vertical profiles. Surface Marine Gas Oil Spill. Season 1**



**Figure 9-21: Maximum probability of water-column oil concentrations exceeding 0.058 ppm, including latitudinal vertical profiles. Surface Marine Gas Oil Spill. Season 2**

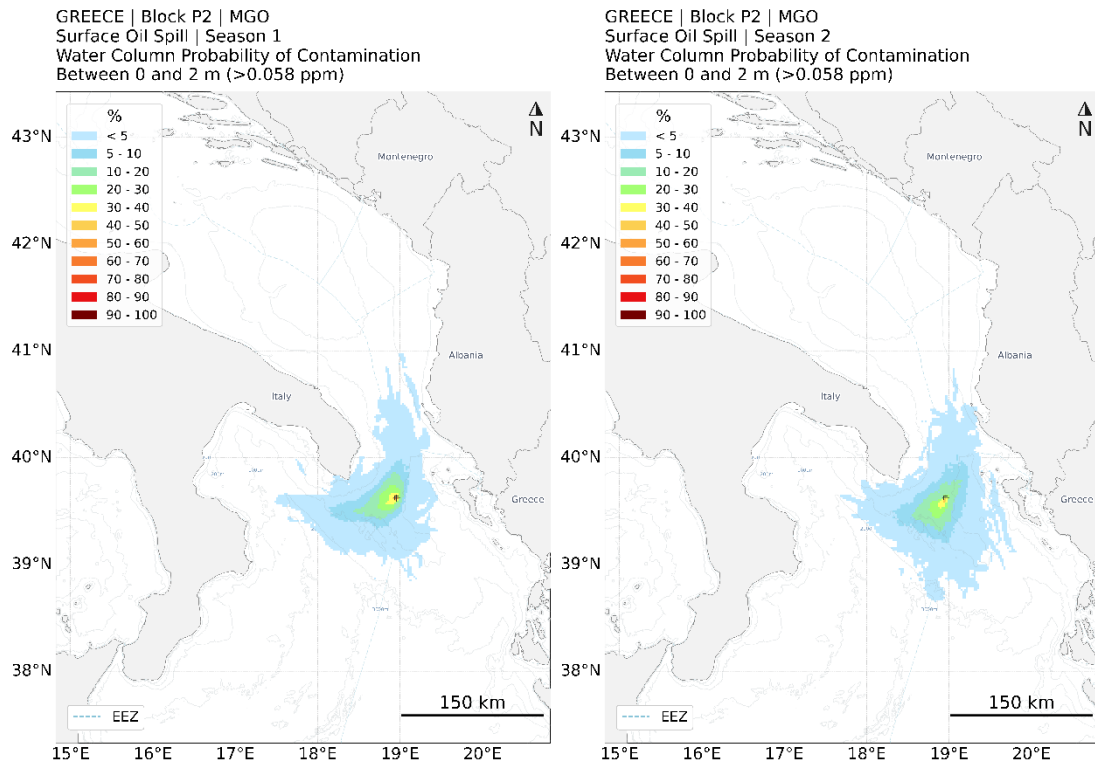


Figure 9-22: Maximum probability of contamination along the water column at layer 1 (0-2 m) (> 0.058 ppm).  
Surface Marine Gas Oil Spill. Season 1 (left) and Season 2 (right).

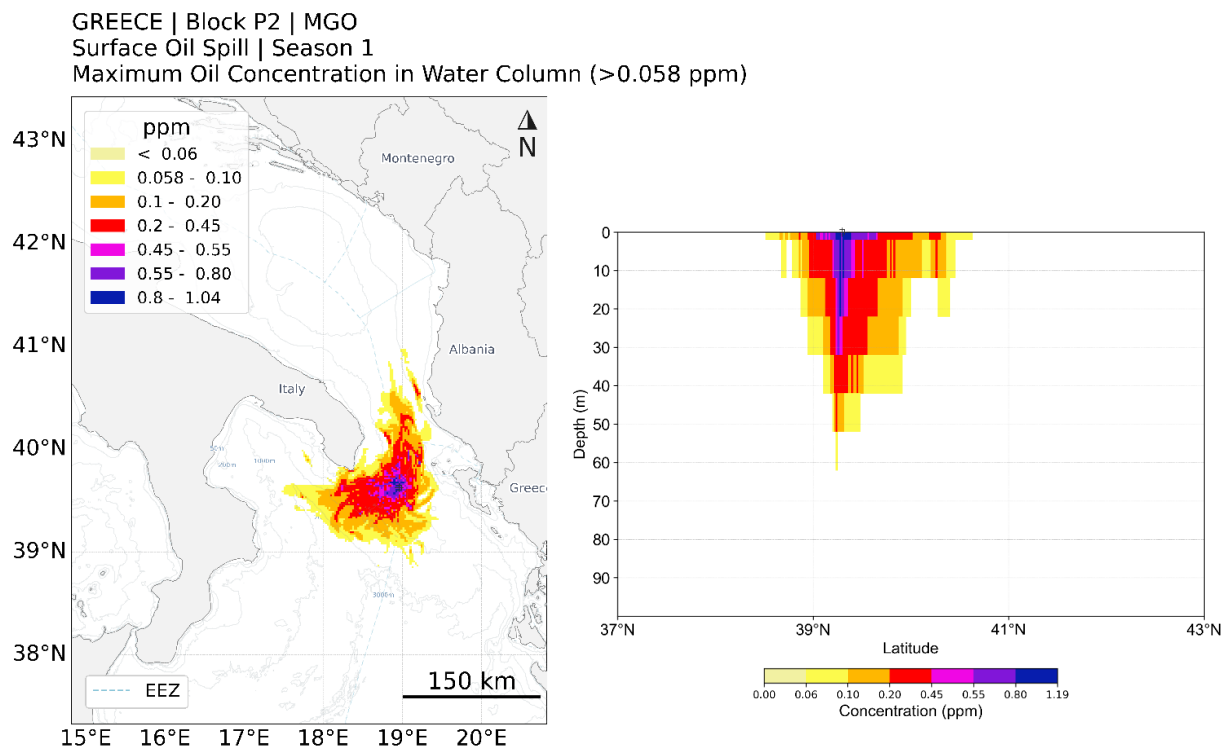


Figure 9-23: Maximum water column oil concentration and latitudinal vertical profile (> 0.058 ppm). Surface Marine  
Gas Oil Spill. Season 1

GREECE | Block P2 | MGO  
Surface Oil Spill | Season 2  
Maximum Oil Concentration in Water Column (>0.058 ppm)

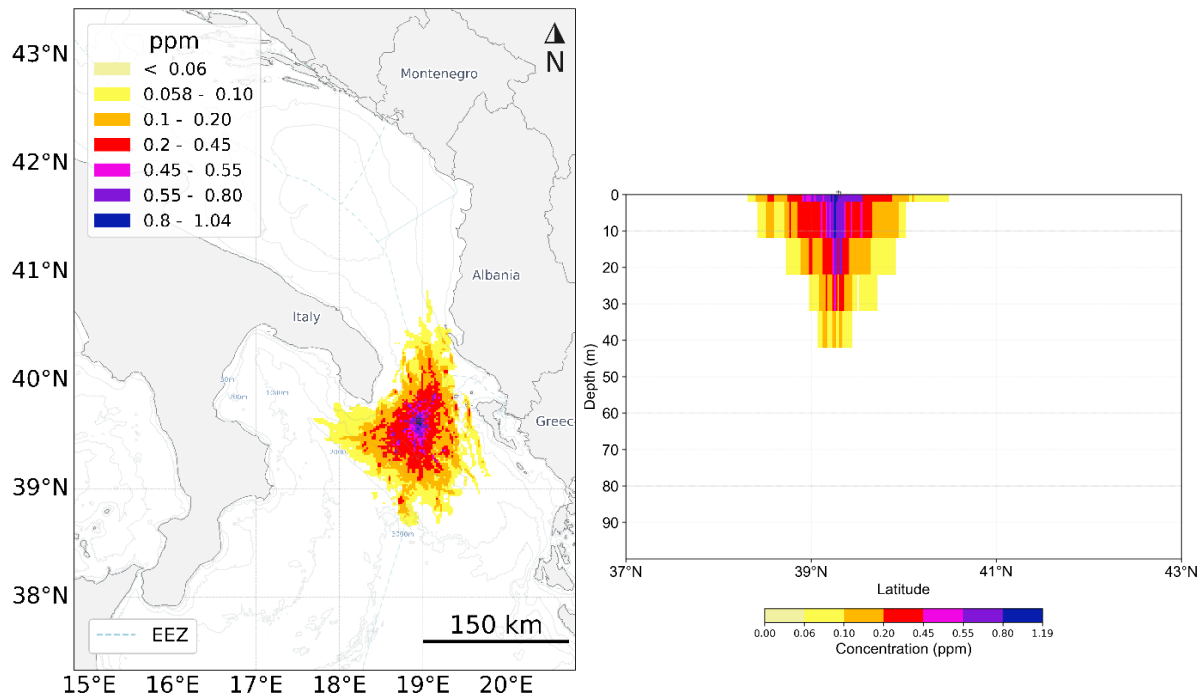


Figure 9-24: Maximum water column oil concentration and latitudinal vertical profile (> 0.058 ppm). Surface Marine Gas Oil Spill. Season 2

#### 9.7.7.4 Shoreline Results

For each season, the highest shoreline-contact probability (Figure 9-25) and shortest shoreline-arrival time (Figure 9-26) are identified in Table 9-26.

Season 1 corresponds to the proposed drilling period, while Season 2 is presented as a sensitivity case.



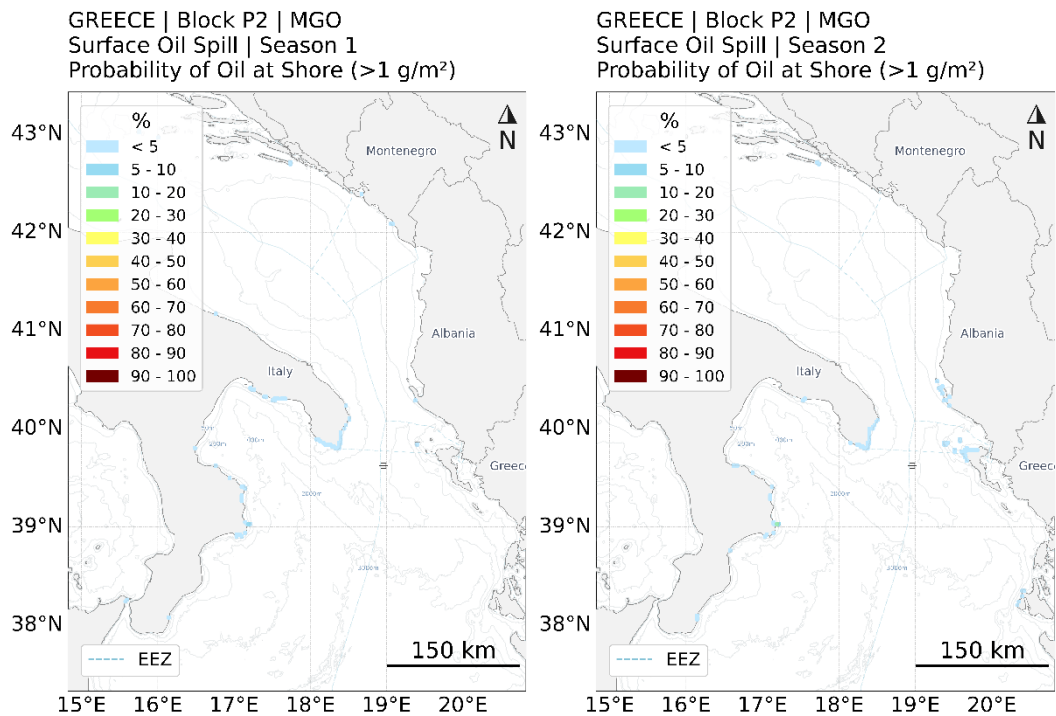


Figure 9-25: Probability of oil at shore ( $>1 \text{ g/m}^2$ ) for surface MGO Spill, Season 1 (left) and Season 2 (right)

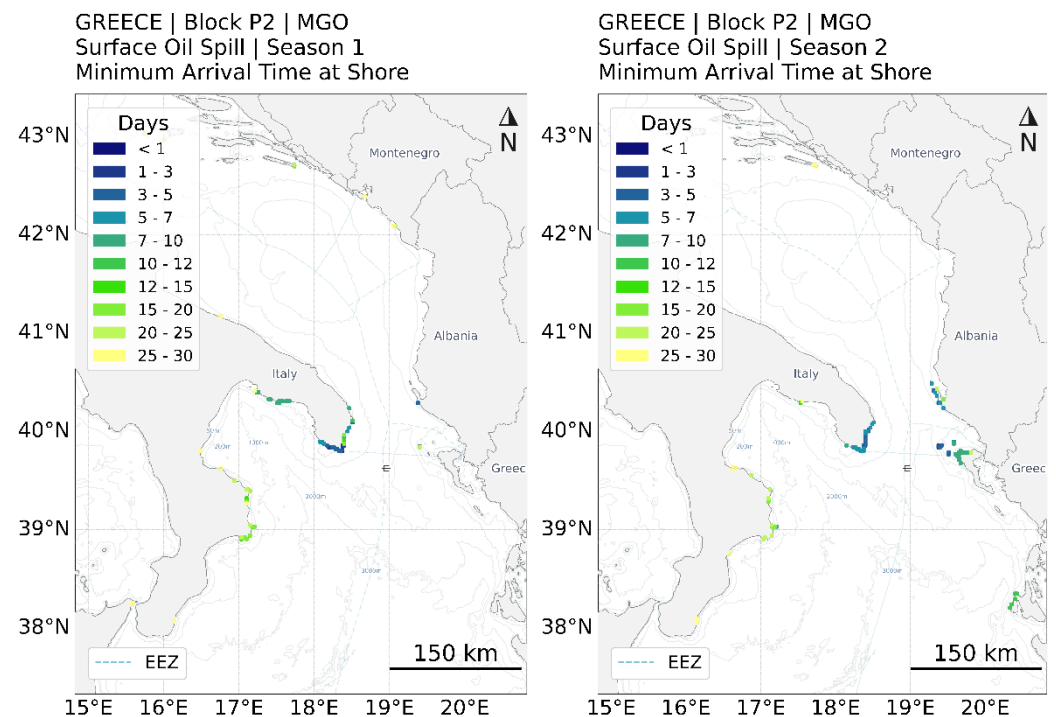


Figure 9-26: Minimum arrival time at the shoreline above the adopted shoreline-oiling threshold of  $1 \text{ g/m}^2$  for surface MGO Spill, Season 1 (left) and Season 2 (right)

Table 9-26: Maximum probability of oil at shore and minimum arrival time, presented by country. Surface MGO Spill

| Country           | Probability (%) |          | Minimum Arrival Time (days) |          |
|-------------------|-----------------|----------|-----------------------------|----------|
|                   | Season 1        | Season 2 | Season 1                    | Season 2 |
| <i>Italy</i>      | 5               | 12,2     | 2,8                         | 3,6      |
| <i>Albania</i>    | 0,2             | 1,4      | 4                           | 4,9      |
| <i>Greece</i>     | 0,2             | 4,2      | 20,4                        | 2,2      |
| <i>Croatia</i>    | 2               | 0,4      | 18,2                        | 28,3     |
| <i>Montenegro</i> | 0,8             | -        | 22,7                        | -        |

### 9.7.7.5 Mass Balance

Figure 9-27 presents the modelled mass balance for the instantaneous surface MGO spill scenario for Season 1 and Season 2. The boxplots illustrate the predicted distribution of the released MGO among the main fate categories, including oil remaining on the sea surface, oil dispersed in the water column, evaporation, biodegradation, sedimentation and shoreline stranding. The figure therefore provides an overview of how the spill is expected to weather and redistribute over the simulation period under the two seasonal metocean conditions.

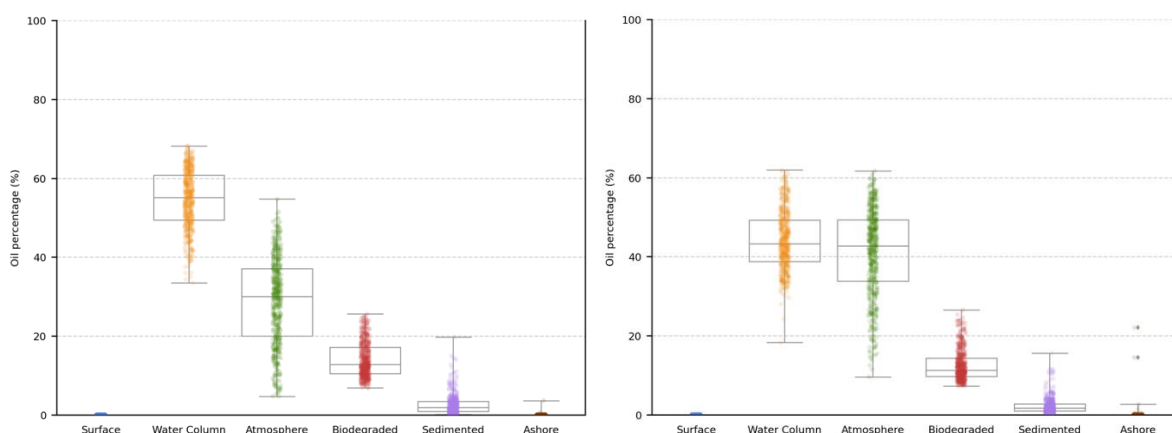


Figure 9-27: Mass balance boxplot for surface MGO Spill, Season 1 (left) and Season 2 (right)

### 9.7.7.6 Season 2 Deterministic Simulation

This section presents two deterministic sensitivity simulations for the 350 m<sup>3</sup> MGO surface-spill scenario. The simulations were selected from the Season 2 stochastic simulation set and represent: (i) the shortest time to shoreline contact identified during Season 2; and (ii) the highest mass of oil reaching the shoreline identified during Season 2.

Season 1 corresponds to the proposed drilling period and remains the primary basis for the ESIA assessment through the Season 1 stochastic results presented in Section 9.7.7.1. The deterministic Season 2

simulations are retained to illustrate specific spill trajectories and oil-fate behaviour under alternative seasonal metocean conditions. They are not representative deterministic simulations of the proposed February/March drilling period.

Unless otherwise stated, the deterministic simulations represent the unmitigated transport and fate of the released MGO and do not account for spill detection, containment, recovery or other response measures. The results therefore illustrate potential spill behaviour in the absence of intervention and should not be interpreted as predictions of residual impacts following implementation of the project's oil-spill response arrangements.

Table 9-27 presents the start dates of the two Season 2 deterministic sensitivity simulations.

**Table 9-27: Start dates of the deterministic Season 2 sensitivity simulations for the 350 m<sup>3</sup> MGO surface spill**

| DETERMINISTIC SENSITIVITY SCENARIO | SIMULATION START DATE |
|------------------------------------|-----------------------|
| Minimum Arrival Time to Shore      | 25 July 2021, 06:00   |
| Maximum Mass on Shore              | 27 July 2021, 02:00   |

For each deterministic sensitivity simulation, the results include the evolution of surface oil thickness and water-column oil concentration over time, the maximum spatial distribution of surface oil thickness, shoreline oil loading and the overall mass balance. These outputs illustrate the transport and weathering behaviour associated with the two selected Season 2 trajectories.

The two Season 2 deterministic sensitivity simulations produced similar oil-drift patterns and maximum oil-thickness distributions. This similarity is attributed to the rapid weathering characteristics of MGO, the instantaneous nature of the release and the close timing of the selected simulations.

The Season 2 Minimum Arrival Time to Shore sensitivity simulation commenced on 25 July 2021 at 06:00. The Season 2 Maximum Mass on Shore sensitivity simulation commenced on 27 July 2021 at 02:00<sup>59</sup>.

In Figures below, the evolution of oil is presented at 6, 24, 48 and 72 hours after the start of the simulation for the MAT and MM scenarios.

In both Season 2 sensitivity simulations, oil initially drifted north-eastward from the release location and reached Othoni Island, Greece, after approximately 2.25 days in the Minimum Arrival Time case and 2.79 days in the Maximum Mass on Shore case. The model subsequently predicted south-westward transport. In the Minimum Arrival Time case, no additional shoreline contact above the adopted 1 g/m<sup>2</sup> threshold was predicted. In the Maximum Mass on Shore case, additional limited shoreline oiling above the adopted threshold was predicted in areas adjacent to Othoni Island.

No surface oil thickness above the adopted 0.3 µm threshold was predicted after approximately 10 days in either simulation, reflecting the rapid weathering characteristics of MGO.

<sup>59</sup> The start dates correspond to the historical metocean conditions used in the oil spill model for the selected deterministic sensitivity simulations. They were identified from the Season 2 stochastic simulation set as the start times that produced, respectively, the shortest shoreline-arrival time and the highest mass of oil on shore. These dates are therefore modelling reference dates only and do not correspond to the planned timing of the Asopus-1 drilling campaign or to a predicted spill occurrence date.

The maximum surface oil-thickness maps indicate that the highest thicknesses were generally within the 25–50  $\mu\text{m}$  range and were concentrated along the initial northeastward transport pathway and subsequent south-westward drift. In the Minimum Arrival Time sensitivity case, a corridor extending approximately 100 km south-westward from the area of greatest thickness was characterised by lower modelled oil thicknesses ranging from 0.3 to 10  $\mu\text{m}$ . In the Maximum Mass on Shore sensitivity case, this low-thickness corridor extended for less than 50 km.

In the Minimum Arrival Time sensitivity case, the modelled shoreline loading at the reported location increased from approximately 0.001  $\text{kg}/\text{m}^2$  upon initial contact to approximately 0.193  $\text{kg}/\text{m}^2$  by the end of the simulation. In the Maximum Mass on Shore sensitivity case, the corresponding modelled loading increased from approximately 0.004  $\text{kg}/\text{m}^2$  to approximately 2.67  $\text{kg}/\text{m}^2$ .

In the unmitigated Season 2 deterministic sensitivity simulations, the surface oil fraction increased rapidly following the instantaneous release and subsequently decreased through weathering, dispersion and shoreline interaction. No surface oil above the adopted modelling threshold remained after approximately 10 days.

Evaporation accounted for approximately 56–60% of the released mass by the end of the 30-day simulation period. Oil in the water column accounted for approximately 28–31.5%, while biodegradation accounted for approximately 7–8%. Oil stranded on the shoreline represented approximately 0.4% of the released mass in the Minimum Arrival Time case and 5.2% in the Maximum Mass on Shore case. Sedimentation represented less than 1% of the released mass.

These results represent the two selected Season 2 sensitivity trajectories without implementation of spill-response measures. They should therefore not be interpreted as the expected residual consequences of a spill during the proposed February/March drilling period.

For the proposed drilling period, the primary ESIA risk-envelope conclusions remain those derived from the Season 1 stochastic simulations: a maximum shoreline-contact probability of approximately 5% and a minimum shoreline-arrival time of approximately 2.8 days, both associated with Italy. The Season 2 deterministic sensitivity simulations provide supplementary trajectory information but do not replace the Season 1 stochastic assessment basis.

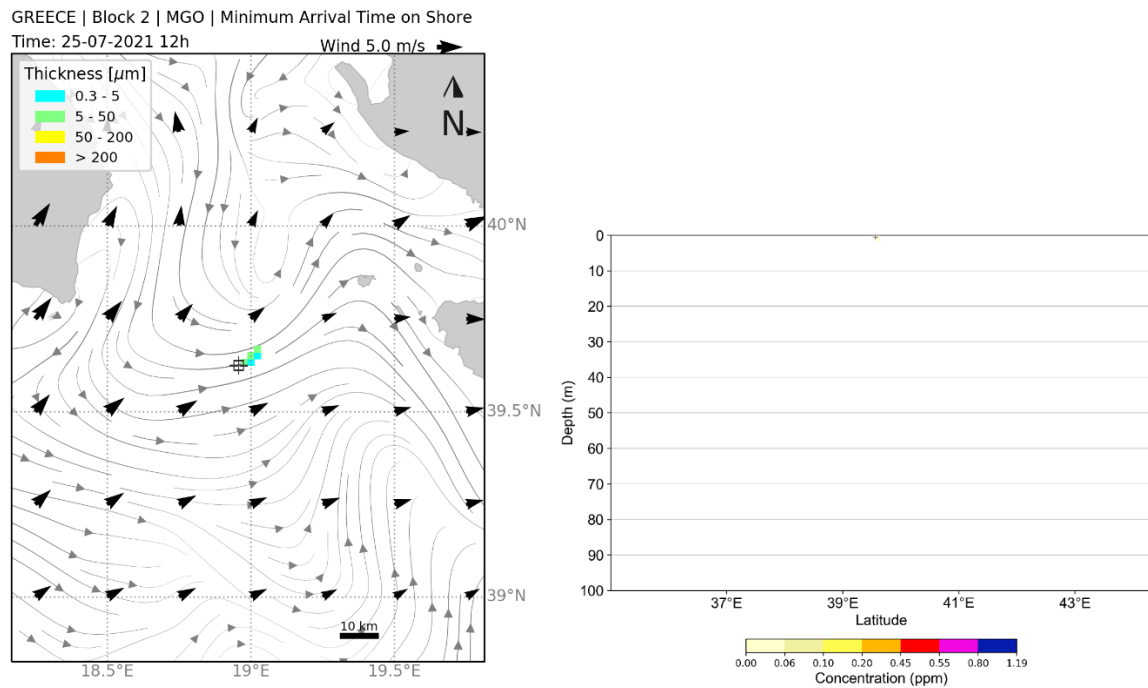
Both deterministic simulations were selected from the Season 2 stochastic simulation set and are retained as sensitivity cases. The Season 1 stochastic results remain the primary basis for the ESIA assessment for the proposed drilling period.

#### 9.7.7.7 Season 2 Minimum Arrival Time Sensitivity Simulation

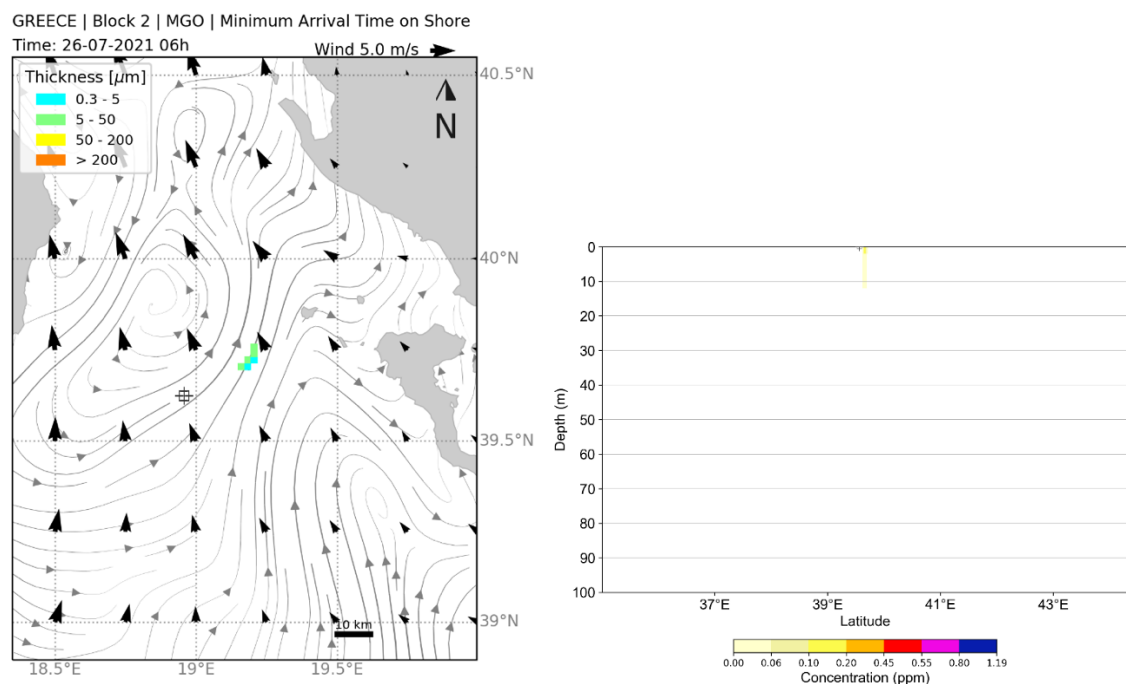
##### 9.7.7.7.1 Surface Results

The following Figures present the deterministic sensitivity simulation for the Season 2 surface MGO spill scenario associated with the shortest predicted shoreline-arrival time. The Figures show the evolution of the spill at 24, 48 and 72 hours after release, illustrating both surface oil thickness and total oil concentration in the water column.

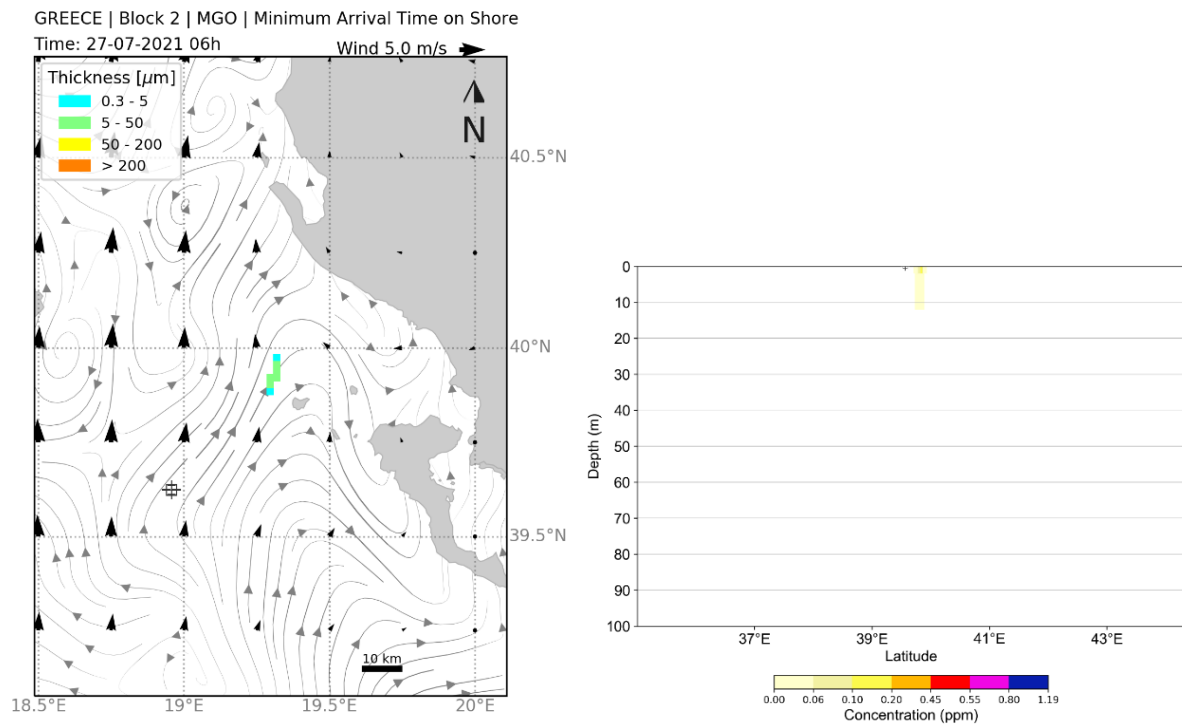
These outputs provide a time-series indication of the predicted movement, spreading and dispersion of MGO during the early phase of the spill, when response actions would be most critical. Figure 9-32 further presents the maximum surface oil thickness predicted over the simulation, identifying the areas where the highest surface concentrations may occur under this conservative sensitivity case.



**Figure 9-28: Season 2 deterministic sensitivity simulation results for the shortest shoreline-arrival time, six hours after release. Surface oil thickness (left) and total water-column oil concentration (right)**



**Figure 9-29: Season 2 deterministic sensitivity simulation for the shortest shoreline-arrival time, 24 hours after release. Surface oil thickness (left) and total water-column oil concentration (right)**



**Figure 9-30: Season 2 deterministic sensitivity simulation for the shortest shoreline-arrival time, 48 hours after release. Surface oil thickness (left) and total water-column oil concentration (right)**



GREECE | Block 2 | MGO | Minimum Arrival Time on Shore  
Time: 28-07-2021 06h

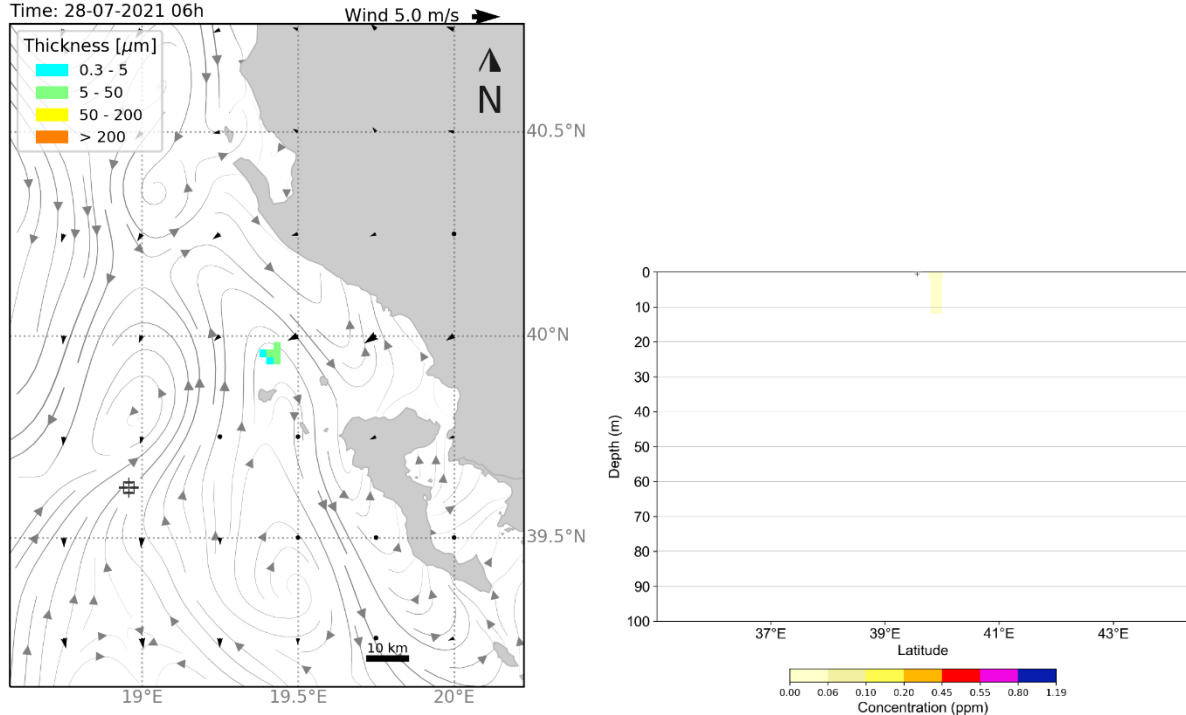


Figure 9-31: Season 2 deterministic sensitivity simulation for the shortest shoreline-arrival time, 72 hours after release. Surface oil thickness (left) and total water-column oil concentration (right)

GREECE | Block 2 | Surface Spill  
Minimum Arrival Time on Shore | Season 2  
Oil Thickness of The Impacted Area (mm)

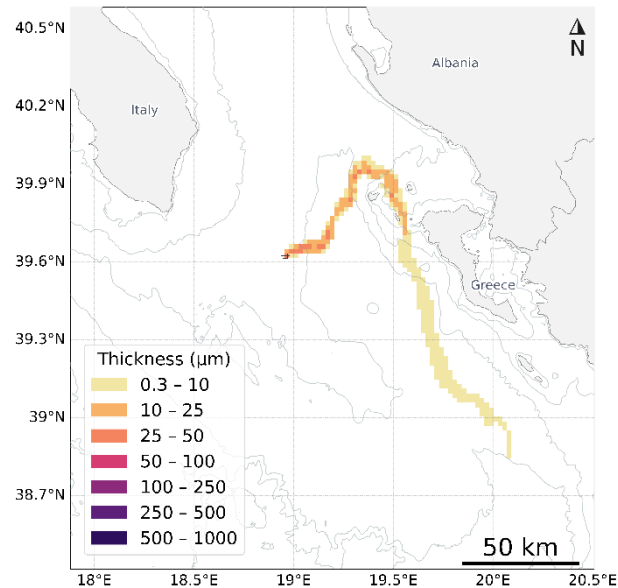
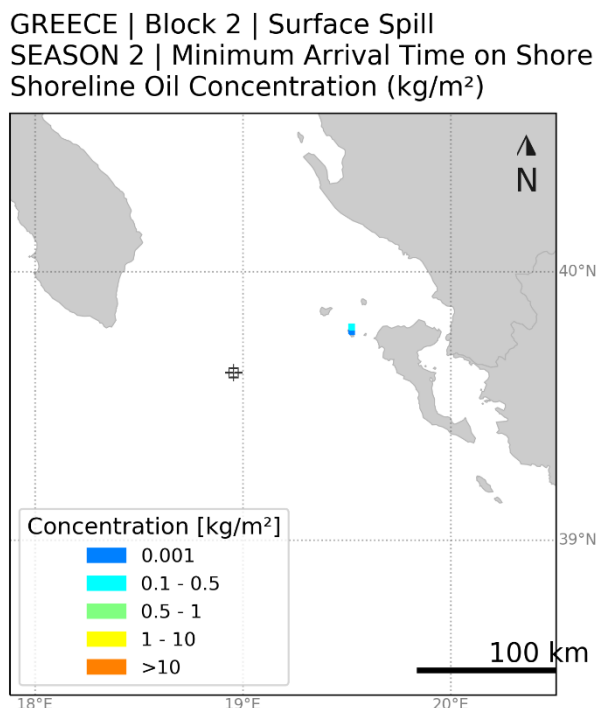


Figure 9-32: Maximum surface oil thickness from the Season 2 Minimum Arrival Time sensitivity simulation

### 9.7.7.7.2 Shoreline results

Figure 9-33 presents the modelled shoreline oil loading at the end of the Season 2 Minimum Arrival Time sensitivity simulation. The figure identifies the shoreline areas where MGO may strand under this conservative deterministic case and shows the predicted loading in kg/m<sup>2</sup>. It provides an indication of the potential spatial distribution and relative intensity of shoreline contact following the shortest predicted shoreline-arrival scenario.



**Figure 9-33: Modelled shoreline oil loading (kg/m<sup>2</sup>) at the end of the Season 2 Minimum Arrival Time sensitivity simulation**

### 9.7.7.7.3 Mass balance

Figure 9-34 and Table 9-28 present the mass balance and final oil fate for the unmitigated Season 2 Minimum Arrival Time sensitivity simulation for the 350 m<sup>3</sup> surface MGO spill. The majority of the released MGO is predicted to evaporate or disperse into the water column, with approximately 60% evaporated and 31.5% present in the water column. A smaller proportion is predicted to biodegrade, amounting to approximately 7.5%, while only limited quantities are predicted to reach the sediment or shoreline, corresponding to 0.6% and 0.4% respectively. This indicates that, under this deterministic sensitivity case, the fate of MGO is dominated by evaporation and water-column dispersion, with limited shoreline stranding.

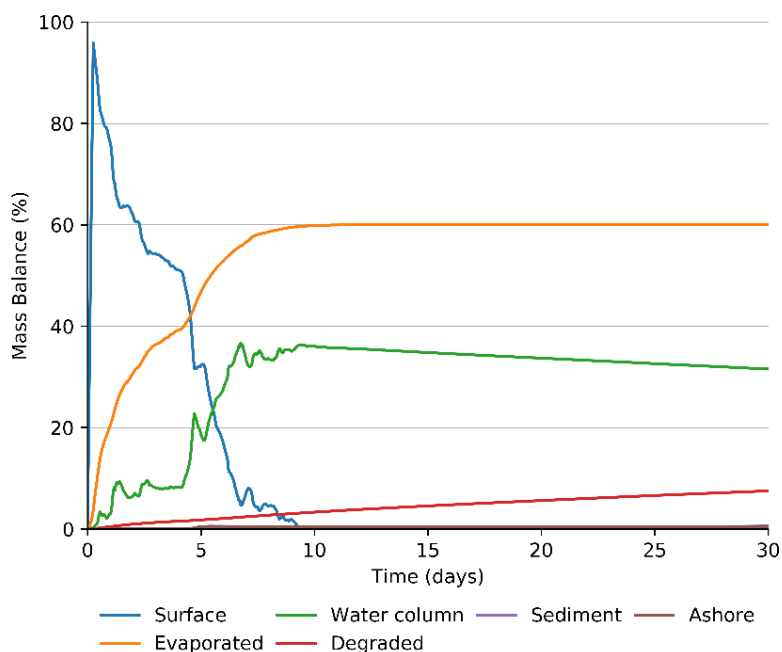


Figure 9-34: Mass Balance of the Season 2 Minimum Arrival Time sensitivity simulation for the 350 m<sup>3</sup> MGO surface spill

Table 9-28: Oil fate after 30 days in the unmitigated Season 2 Minimum Arrival Time sensitivity simulation for the 350 m<sup>3</sup> MGO surface spill

| SURFACE |     | EVAPORATED |       | WATER COLUMN |      | DEGRADED |      | SEDIMENT |     | ASHORE |     |
|---------|-----|------------|-------|--------------|------|----------|------|----------|-----|--------|-----|
| (%)     | (t) | (%)        | (t)   | (%)          | (t)  | (%)      | (t)  | (%)      | (t) | (%)    | (t) |
| -       | -   | 60         | 172,8 | 31,5         | 90,8 | 7,5      | 21,6 | 0,6      | 1,6 | 0,4    | 1,1 |

#### 9.7.7.8 Season 2 Maximum Mass on Shore Sensitivity Simulation

The Season 2 Maximum Mass on Shore sensitivity simulation represents the deterministic case that produces the greatest shoreline oil loading for the 350 m<sup>3</sup> surface MGO spill under the Season 2 metocean conditions. The results are presented to illustrate the temporal evolution of the spill, the extent of shoreline contact, and the final distribution of oil among the main fate compartments.

##### 9.7.7.8.1 Surface Results

The following Figures present the modelled spill development during the first 72 hours after release, showing both surface oil thickness and total water-column oil concentration at 6, 24, 48 and 72 hours. These figures illustrate the short-term transport and weathering behaviour of the released MGO.

GREECE | Block 2 | MGO | Maximum Mass on Shore  
Time: 27-07-2021 08h

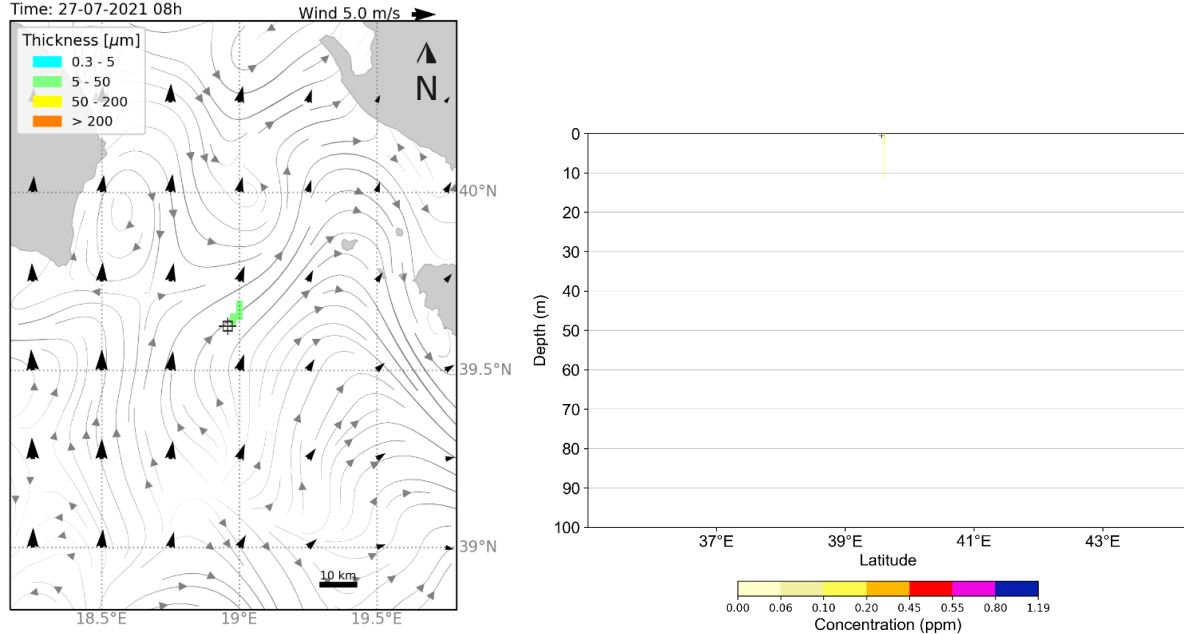


Figure 9-35: Season 2 deterministic sensitivity simulation for the shoreline-oil loading (kg/m<sup>2</sup>), 6 hours after release.  
Surface oil thickness (left) and total water-column oil concentration (right)

GREECE | Block 2 | MGO | Maximum Mass on Shore  
Time: 28-07-2021 02h

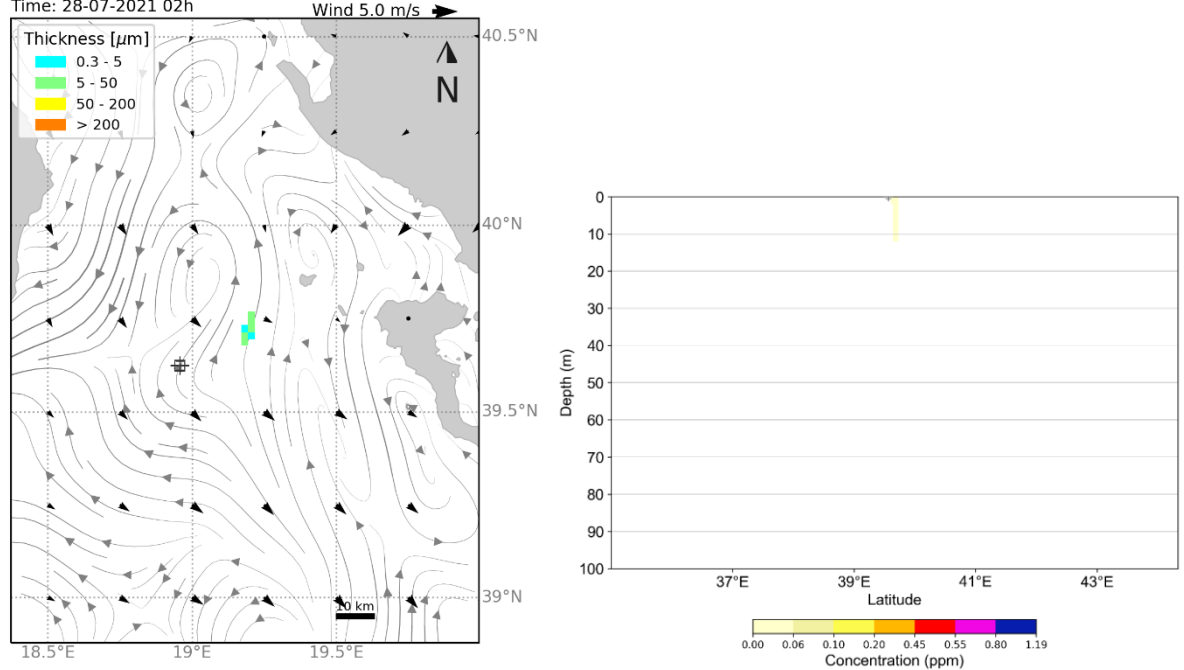
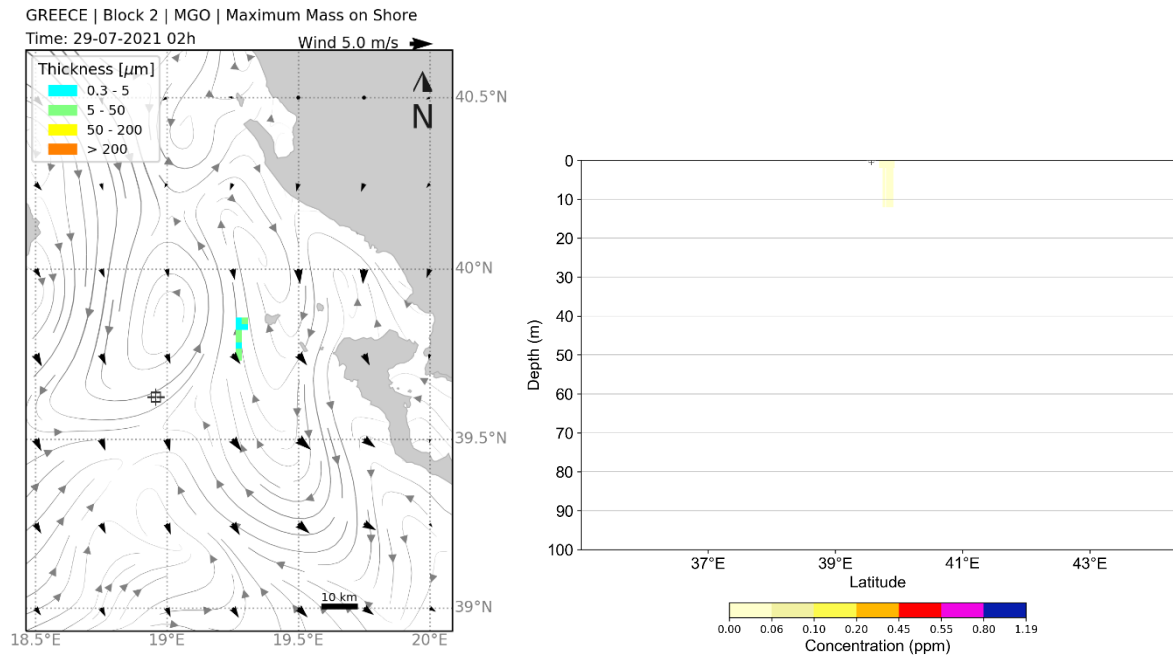
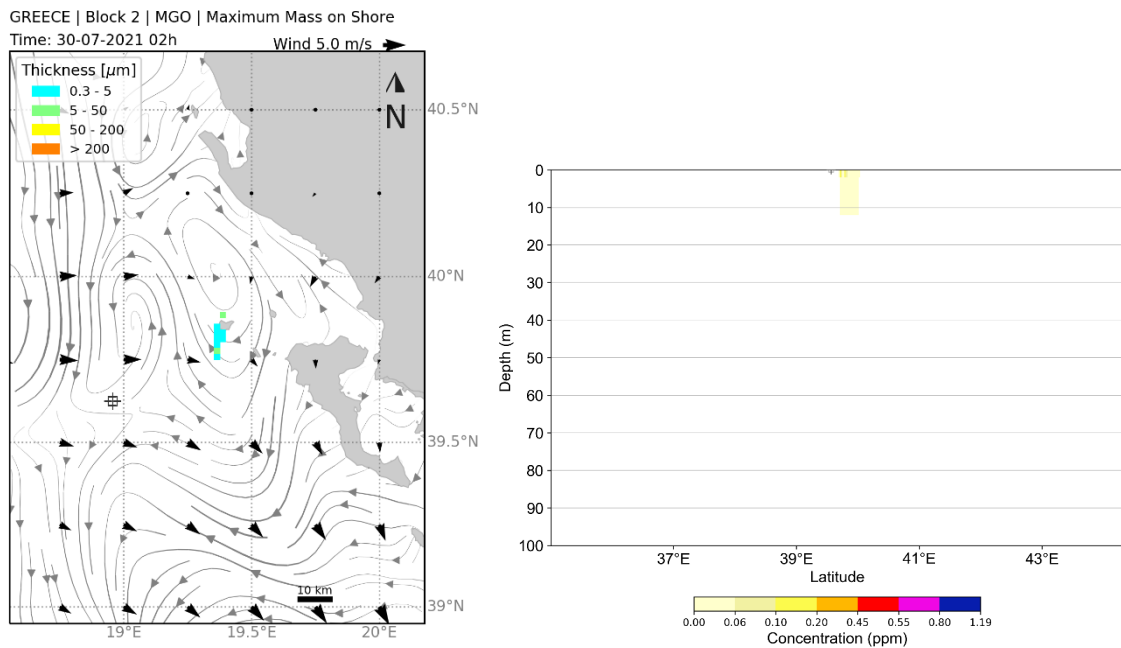


Figure 9-36: Season 2 deterministic sensitivity simulation for the shoreline-oil loading (kg/m<sup>2</sup>), 24 hours after release. Surface oil thickness (left) and total water-column oil concentration (right)



**Figure 9-37: Season 2 deterministic sensitivity simulation for the shoreline-oil loading ( $\text{kg}/\text{m}^2$ ), 48 hours after release. Surface oil thickness (left) and total water-column oil concentration (right)**



**Figure 9-38: Season 2 deterministic sensitivity simulation for the shoreline-oil loading ( $\text{kg}/\text{m}^2$ ), 72 hours after release. Surface oil thickness (left) and total water-column oil concentration (right)**

Figure 9-39 shows the maximum surface oil thickness predicted during the simulation. Together, these figures provide a representative picture of the areas most affected at the sea surface and within the water column in this maximum-mass-on-shore case.

GREECE | Block 2 | Surface Spill  
Maximum Mass on Shore | 2  
Oil Thickness of The Impacted Area (mm)

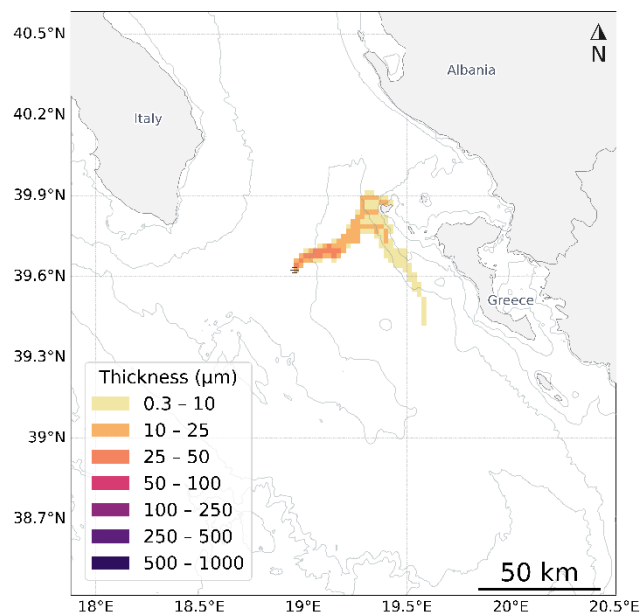
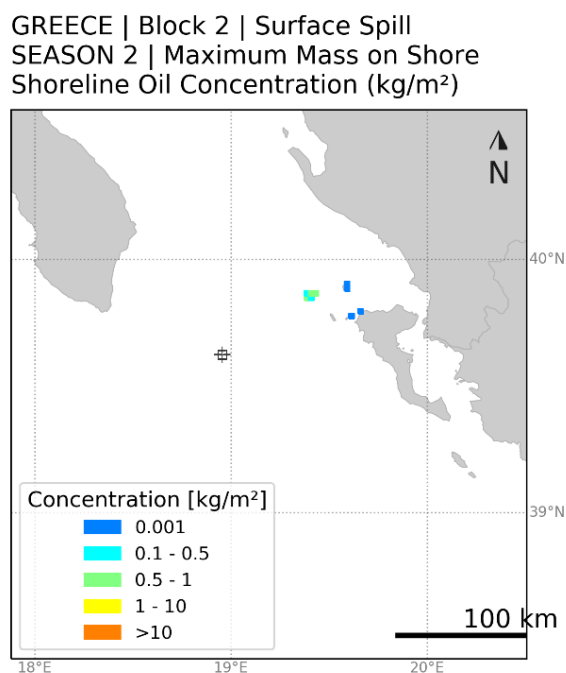


Figure 9-39: Maximum surface oil thickness ( $\mu\text{m}$ ) predicted in the Season 2 Maximum Mass on Shore sensitivity simulation for the 350 m<sup>3</sup> MGO surface spill

#### 9.7.7.8.2 Shoreline results

Figure 9-40 presents the modelled shoreline oil loading after 30 days and identifies the coastal areas where shoreline contact is predicted to occur under this sensitivity scenario. As this is the maximum-mass-on-shore case, the figure represents the most conservative deterministic estimate of shoreline impact for the Season 2 MGO surface spill.

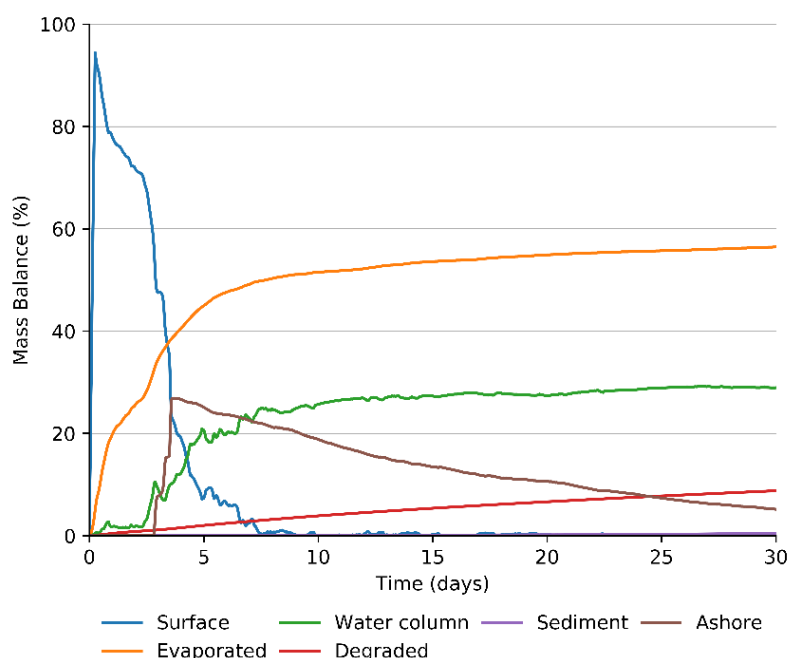




**Figure 9-40: Modelled shoreline oil loading (kg/m<sup>2</sup>) after 30 days in the Season 2 Maximum Mass on Shore sensitivity simulation for the 350 m<sup>3</sup> MGO surface spill**

### 9.7.7.8.3 Mass balance

Figure 9-41 and Table 9-29 present the mass balance and final oil fate for the unmitigated Season 2 Maximum Mass on Shore sensitivity simulation. After 30 days, only a very small proportion of the released oil is predicted to remain on the sea surface (0.2%, or 0.7 t). The majority of the spill is predicted to evaporate (56.5%, or 162.6 t) or remain dispersed in the water column (28.9%, or 83.3 t), while a smaller proportion is predicted to biodegrade (8.8%, or 25.3 t). Limited quantities are predicted to reach the seabed (0.4%, or 1.3 t), whereas the amount reaching the shoreline is estimated at 5.2% (14.8 t). The results therefore indicate that, even in this conservative shoreline-impact scenario, the behaviour of MGO is still dominated by rapid weathering and dispersion.



**Figure 9-41: Mass Balance of the Season 2 Maximum Mass on Shore sensitivity simulation for the 350 m<sup>3</sup> MGO surface spill**

**Table 9-29: Oil fate after 30 days in the unmitigated Season 2 Maximum Mass on Shore sensitivity simulation for the 350 m<sup>3</sup> MGO surface spill**

| SURFACE |     | EVAPORATED |       | WATER COLUMN |      | DEGRADED |      | SEDIMENT |     | ASHORE |      |
|---------|-----|------------|-------|--------------|------|----------|------|----------|-----|--------|------|
| (%)     | (t) | (%)        | (t)   | (%)          | (t)  | (%)      | (t)  | (%)      | (t) | (%)    | (t)  |
| 0,2     | 0,7 | 56,5       | 162,6 | 28,9         | 83,3 | 8,8      | 25,3 | 0,4      | 1,3 | 5,2    | 14,8 |

### 9.7.8 Conclusions

The oil spill modelling evaluated the unmitigated transport, weathering and fate of an instantaneous release of 350 m<sup>3</sup> of Marine Gas Oil (MGO) from a fuel tank aboard a Platform Supply Vessel supporting the proposed Asopus-1 exploration well. The modelling excludes spill detection, containment, recovery and other response actions.

Season 1, spanning October to March, encompasses the proposed drilling period in February and March, and thus establishes the primary risk envelope for the Environmental and Social Impact Assessment (ESIA). Under Season 1 conditions, the probability of surface oil occurrence exceeding 90% remains confined to approximately 2 km from the release location, while the area with a probability greater than 30% extends to approximately 4 km. The maximum modelled surface extent may reach approximately 122 km within six days; however, this outer extent is associated with the lowest probability category and does not represent the expected or high-probability spill footprint.

For Season 1, the highest modelled shoreline-contact probability is associated with Italy, at approximately 5%, with a minimum shoreline-arrival time of approximately 2.8 days. Lower shoreline-contact probabilities are predicted for Croatia, Montenegro, Albania and Greece. These results reflect conditions without implementation of oil-spill response measures.

After 30 days under Season 1 conditions, approximately 55% of the released MGO is dispersed within the water column, approximately 30% has evaporated and approximately 11–12% has biodegraded. Less than 0.05% remains at the sea surface. These results demonstrate the rapid weathering of MGO but do not preclude temporary surface exposure, water-column exposure or shoreline contact.

Season 2 was modelled as a sensitivity case to assess spill behaviour under alternative seasonal metocean conditions. The two deterministic simulations presented in this chapter (Minimum Arrival Time and Maximum Mass on Shore cases) were selected from the Season 2 stochastic simulation set. Both cases predicted shoreline contact at Othoni Island, Greece, within approximately 2–3 days. Oil stranded on the shoreline accounted for approximately 0.4% of the released mass in the Minimum Arrival Time case and 5.2% in the Maximum Mass on Shore case. After approximately 10 days, no surface oil thickness exceeded the adopted 0.3 µm threshold. These deterministic cases provide supplementary sensitivity information and are not representative of the proposed February/March drilling period. They do not replace the Season 1 stochastic results as the primary basis for the ESIA assessment.

Overall, the modelling indicates that the representative 350 m<sup>3</sup> MGO surface spill would weather rapidly, with the highest-probability surface footprint remaining close to the release location. Nevertheless, the unmitigated modelling predicts the potential for wider surface transport, water-column exposure and shoreline contact, including possible transboundary shoreline contact. The environmental significance of these outcomes is evaluated in the relevant ESIA receptor and impact-assessment sections and cannot be determined from trajectory modelling alone.

The modelling results inform the Project's oil-spill preparedness and response arrangements, including detection, notification, mobilisation, containment, recovery, shoreline-response planning and, where applicable, transboundary communication. As response measures were not included in the modelling, the results represent the unmitigated spill envelope rather than the residual effects expected following implementation of the project's response arrangements.

Separately, although a sustained uncontrolled subsea blowout is not adopted as the representative environmental release scenario for this ESIA, the project shall maintain contingency arrangements for well-source control and emergency response, including BOP intervention, capping, containment, and relief-well planning, in accordance with applicable requirements and project emergency preparedness procedures.

## 9.8 Risk evaluation and measures of risk

The risk evaluation is reported for the following risks measures as below:

- Individual Risk per Annum (IRPA)
- Fatal Accident Rate (FAR)
- Potential Loss of Life (PLL) per year
- Main Safety Function (MSF) Impairment frequency per year.

### 9.8.1 Individual risk per annum

The IRPA and the contribution from each accidental event are shown in Table 9-30, and the graphical illustration of the risk results is provided on the bar chart in Figure 9-42 below,

**Table 9-30: Individual Risk Per Annum (IRPA)**

| RISK CONTRIBUTOR                   | INDIVIDUAL RISK PER ANNUM (/YR) |                |                 |                |                 |                |
|------------------------------------|---------------------------------|----------------|-----------------|----------------|-----------------|----------------|
|                                    | OPERATIONAL                     | % CONTRIBUTION | MAINTENANCE     | % CONTRIBUTION | ACCOMMODATION   | % CONTRIBUTION |
| Blowouts and well releases         | 6.00E-07                        | 1.33%          | 1.66E-08        | 0.04%          | 2.19E-08        | 0.08%          |
| Fire, explosion and toxic releases | 5.97E-08                        | 0.13%          | 3.43E-07        | 0.77%          | 6.02E-08        | 0.23%          |
| Marine events                      | 3.79E-06                        | 8.43%          | 3.79E-06        | 8.48%          | 3.79E-06        | 14.64%         |
| Dropped objects                    | 3.38E-06                        | 7.51%          | 3.38E-06        | 7.54%          | -               | 0%             |
| Occupational accidents (ex. DOs)   | 1.63E-05                        | 36.34%         | 1.63E-05        | 36.52%         | 1.23E-06        | 4.76%          |
| Helicopter transport               | 2.08E-05                        | 46.26%         | 2.08E-05        | 46.49%         | 2.08E-05        | 80.28%         |
| Helicopter crash and fire          | -                               | 0%             | 7.46E-08        | 0.17%          | -               | 0%             |
| <b>Total</b>                       | <b>4.50E-05</b>                 | <b>100%</b>    | <b>4.47E-05</b> | <b>100%</b>    | <b>2.59E-05</b> | <b>100%</b>    |

**Note:** The blowout and well-release contributions presented in Table 9-30 are derived from the conservative Stena DrillMAX QRA basis and do not take quantitative credit for the additional risk reduction provided by the project-specific E-SID. The E-SID is therefore additional to the safeguards reflected in the reported personnel-risk results.

The IRPA results are predominantly driven by helicopter transportation risk, which contributes approximately 46% of the calculated individual risk for operational and maintenance personnel and approximately 80% for accommodation personnel. Occupational accidents are the largest onboard contributor for operational and maintenance personnel, while marine events and dropped objects make smaller contributions.

Blowouts, well releases, fires, explosions and toxic releases make a relatively small contribution to the calculated IRPA. These results reflect the frequencies, consequence assumptions, occupancy distributions and credited prevention and mitigation measures adopted in the QRA.

The helicopter contribution is dependent on the assumed number of personnel movements, flight frequency, flight duration and campaign duration. These inputs shall be confirmed against the final campaign logistics plan.

Overall, the calculated individual-risk profile is primarily influenced by helicopter transportation and occupational activities rather than facility-related major accident hazards. The calculated IRPA values remain below the applicable upper tolerability criterion. The project-specific POB, worker-group composition and helicopter-exposure assumptions shall be verified against the final campaign manning, and logistics plans before operations commence.

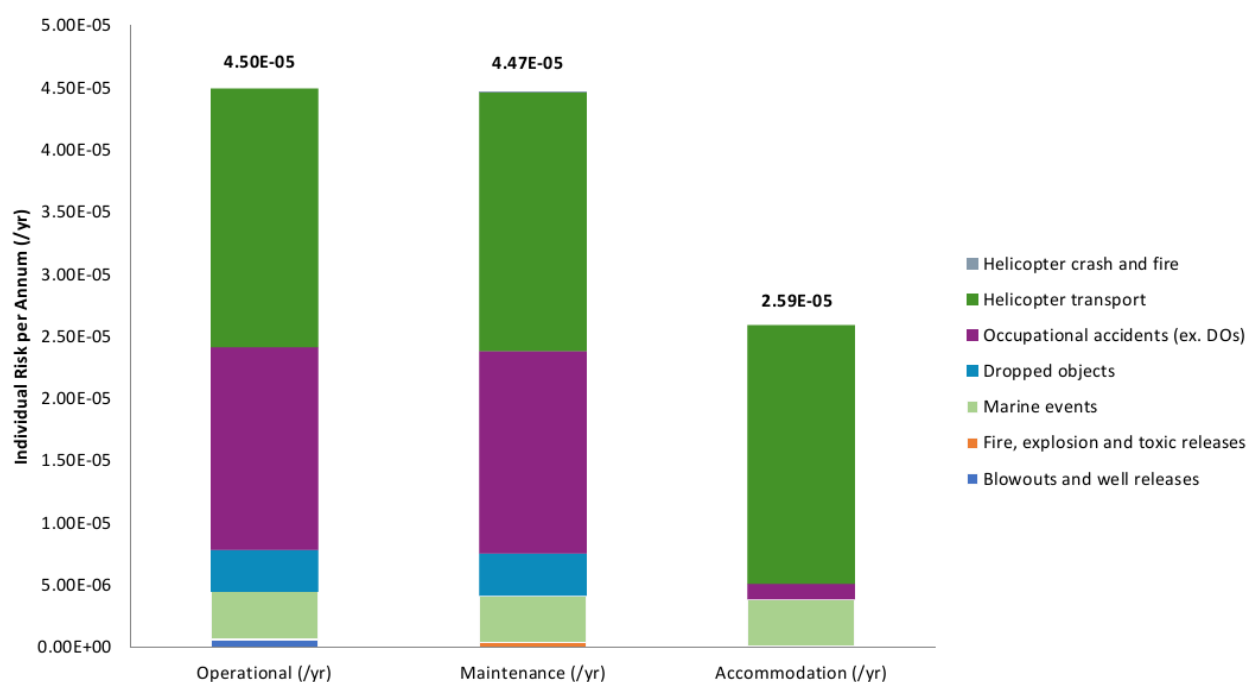


Figure 9-42: IRPA Distribution between Events and Worker Groups

Figure 9-42 illustrates that helicopter transportation and occupational accidents are the principal contributors to IRPA, followed by marine events and dropped objects.

## 9.8.2 Fatal accident rate

The Fatal Accident Rate (FAR) results, expressed as fatalities per  $10^8$  exposed hours, are presented in Table 9-31 and illustrated in Figure 9-43.

The combined FAR shown in Table 9-31 is dominated by helicopter transportation, which contributes approximately 99.5% of the calculated total. The helicopter transportation FAR is normalised to actual flight exposure hours and is therefore not directly comparable to the facility-related FAR acceptance criterion. Excluding helicopter transportation, the calculated facility related FAR is 2.16 fatalities per 10<sup>8</sup> exposed hours.

**Table 9-31: Fatal Accident Rate (FAR)**

| RISK CONTRIBUTOR                   | FATAL ACCIDENT RATE (PER 10 <sup>8</sup> EXPOSED HOURS) |               |               | AVERAGE FAR (PER 10 <sup>8</sup> EXPOSED HOURS) | % CONTRIBUTION (AVERAGE ONLY) |
|------------------------------------|---------------------------------------------------------|---------------|---------------|-------------------------------------------------|-------------------------------|
|                                    | OPERATIONAL                                             | MAINTENANCE   | ACCOMMODATION |                                                 |                               |
| Blowouts and well releases         | 0.07                                                    | 0.00          | 0.00          | 0.07                                            | 0.02%                         |
| Fire, explosion and toxic releases | 0.01                                                    | 0.04          | 0.01          | 0.02                                            | 0.00%                         |
| Marine events                      | 0.45                                                    | 0.45          | 0.45          | 0.45                                            | 0.11%                         |
| Dropped objects                    | 0.40                                                    | 0.40          | -             | 0.27                                            | 0.06%                         |
| Occupational accidents (ex. DOs)   | 1.95                                                    | 1.95          | 0.15          | 1.35                                            | 0.32%                         |
| Travel accidents                   | 416.00                                                  | 416.00        | 416.00        | 416.00                                          | 99.48%                        |
| Helicopter crash and fire          | 0.00                                                    | 0.01          | 0.00          | 0.00                                            | 0.00%                         |
| <b>Total</b>                       | <b>418.88</b>                                           | <b>418.85</b> | <b>416.61</b> | <b>418.16</b>                                   | <b>100%</b>                   |

*Note: The helicopter transportation FAR is calculated using actual flight-exposure hours and is presented separately from the facility-related FAR. The applicable FAR acceptance criterion is assessed against the facility related FAR of 2.16 fatalities per 10<sup>8</sup> exposed hours. The blowout and well-release contributions retain the conservative Stena DrillMAX QRA basis and do not take quantitative credit for the additional project-specific E-SID risk reduction.*

The combined FAR is dominated by helicopter transport because the travel FAR is normalised to actual flight-exposure hours. This differs from the exposure basis used for facility-related hazards, so the combined FAR of 418.16 fatalities per 10<sup>8</sup> exposed hours should not be compared directly with the facility-related FAR acceptance criterion.

Excluding helicopter transport, the calculated facility related FAR is 2.16 fatalities per 10<sup>8</sup> exposed hours. This is below the Stena DrillMAX base-case QRA value of 2.35 and the project acceptance criterion of 10 fatalities per 10<sup>8</sup> exposed hours. Therefore, the facility-related FAR acceptance criterion is met.

Occupational accidents are the largest contributor to the facility related FAR, followed by marine events and dropped objects. Blowouts, well releases, fires, explosions and toxic releases make a comparatively small contribution to the facility-related FAR. These results reflect the event frequencies, consequence assumptions, occupancy distributions and credited prevention and mitigation measures used in the QRA.

The helicopter transportation FAR is sensitive to the assumed number of personnel movements, flight frequency, flight duration and campaign duration. These inputs shall be verified against the final campaign manning and logistics plans before operations commence..

Figure 9-43 presents the distribution of facility related FAR excluding helicopter transportation. Occupational accidents are the principal contributor, followed by marine events and dropped objects.

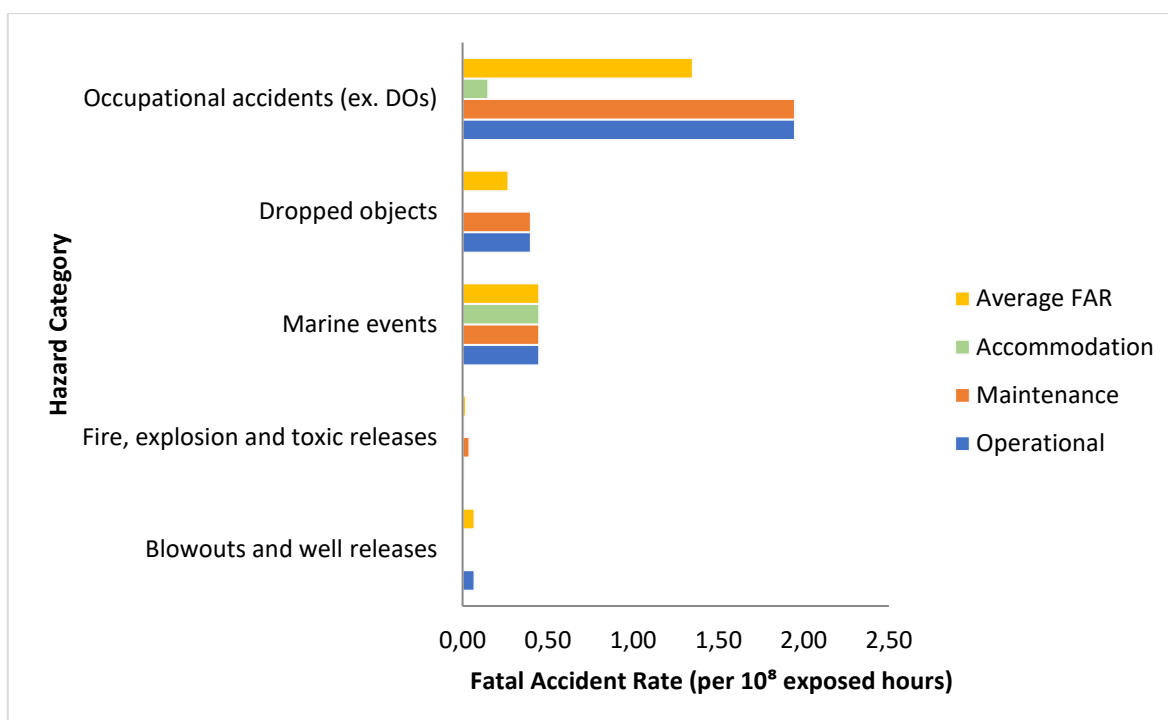


Figure 9-43: FAR Distribution between Events and Worker Groups (excl. Helicopter Travel)

### 9.8.3 Potential Loss of Life (PLL)

PLL is a measure of the number of fatalities in a year due to workers' exposure to accidental events. The PLL is presented for immediate event (i.e. personnel caught up by the immediate effect of the incident or while attempting to muster) and EER fatalities (i.e. personnel killed while trying to evacuate or escape from the incident).

PLL and graphical representation of PLL results are shown in Table 9-32 and Figure 9-44, respectively.

It should be noted that PLL results reflect the personnel numbers, worker-group distribution, helicopter movements and campaign duration assumed in the QRA. These inputs shall be verified against the final campaign manning, and logistics plans before operations commence.

The blowout and well-release contribution retains the conservative Stena DrillMAX QRA basis and does not take quantitative credit for the additional project-specific E-SID risk reduction. In reality the specific PLL value from blowouts and well releases will be significantly reduced, by implementing the ALARP measure of E-SID inclusion in the project design.

Table 9-32: PLL (Fatalities Per Year)

| RISK CONTRIBUTOR                    | POTENTIAL LOSS OF LIFE (PLL) (FATALITIES PER YEAR) |            |          | % CONTRIBUTION |
|-------------------------------------|----------------------------------------------------|------------|----------|----------------|
|                                     | IMMEDIATE AND MUSTER                               | EVACUATION | TOTAL    |                |
| Blowouts and well releases          | 3.13E-05                                           | 7.05E-06   | 3.83E-05 | 0.65%          |
| Fire & Explosion and toxic releases | 2.14E-05                                           | 2.33E-09   | 2.14E-05 | 0.36%          |



| RISK CONTRIBUTOR                 | POTENTIAL LOSS OF LIFE (PLL) (FATALITIES PER YEAR) |                 |                 | % CONTRIBUTION |
|----------------------------------|----------------------------------------------------|-----------------|-----------------|----------------|
|                                  | IMMEDIATE AND MUSTER                               | EVACUATION      | TOTAL           |                |
| Marine Event                     | -                                                  | 1.37E-03        | 1.37E-03        | 23.10%         |
| Dropped objects                  | 3.38E-04                                           | -               | 3.38E-04        | 5.70%          |
| Occupational accidents (ex. DOs) | 1.66E-03                                           | -               | 1.66E-03        | 27.99%         |
| Travel accidents                 | 2.50E-03                                           | -               | 2.50E-03        | 42.16%         |
| Helicopter crash and fire        | 3.73E-06                                           | -               | 3.73E-06        | 0.06%          |
| <b>Total</b>                     | <b>4.55E-03</b>                                    | <b>1.37E-03</b> | <b>5.93E-03</b> | <b>100%</b>    |

The overall Potential Loss of Life (PLL) is 5.93E-03 fatalities per year. The largest contributors are travel accidents (approximately 42.2%), followed by occupational accidents (approximately 28.0%) and marine events (approximately 23.1%). Together, these account for approximately 93% of the total PLL, indicating that travel and workplace safety activities dominate the overall risk profile. Dropped objects contribute 5.70%, while major accident hazards such as blowouts and well releases (0.65%) and fire, explosion, and toxic releases (0.36%) make relatively minor contributions.

The results indicate that the principal contributors to PLL are travel accidents, occupational accidents and marine events. Continued attention to these risk drivers, together with maintenance of existing process safety barriers and emergency response arrangements, remains important to ensure risks remain ALARP.

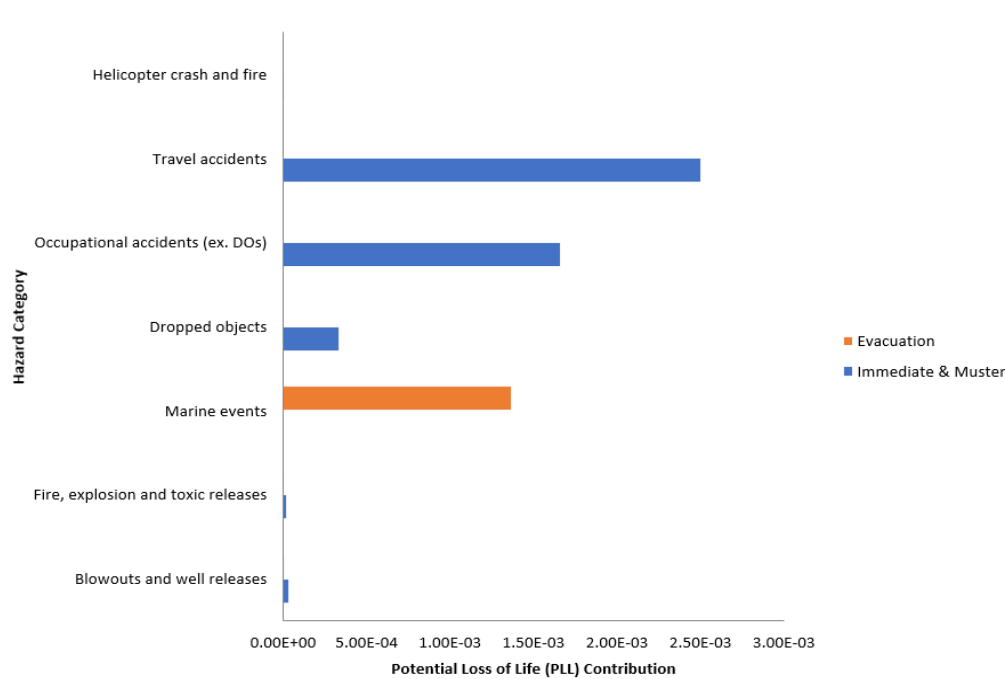


Figure 9-44: PLL Distribution between Events

## 9.8.4 Main Safety Function (MSF) impairment

Table 9-33 shows the frequency with which accidental events will result in loss or impairment of the main safety functions per year, and the graphical representation of the impairment frequencies is shown in Figure 9-45.

**Table 9-33: Main Safety Function Impairment Per Year**

| RISK CONTRIBUTOR                   | IMPAIRMENT FREQUENCY (/YR) |                    |                      |                 | % CONTRIBUTION (TR ONLY) |
|------------------------------------|----------------------------|--------------------|----------------------|-----------------|--------------------------|
|                                    | ESCAPE ROUTES              | EVACUATION SYSTEMS | STRUCTURAL INTEGRITY | TR              |                          |
| Blowouts and well releases         | 3.47E-08                   | 3.47E-08           | -                    | 1.78E-07        | 17.00%                   |
| Fire, explosion and toxic releases | 8.87E-09                   | 1.63E-08           | -                    | 1.98E-09        | 0.19%                    |
| Helicopter crash and fire          | -                          | -                  | -                    | 8.69E-07        | 82.81%                   |
| Ship collision                     | 2.78E-07                   | 2.78E-07           | 2.78E-07             | -               | 0%                       |
| Structural failure                 | 2.65E-06                   | 2.65E-06           | 2.65E-06             | -               | 0%                       |
| Reduction in stability             | 6.02E-06                   | 6.02E-06           | 6.02E-06             | -               | 0%                       |
| <b>Total</b>                       | <b>8.99E-06</b>            | <b>9.00E-06</b>    | <b>8.95E-06</b>      | <b>1.05E-06</b> | <b>100%</b>              |

**Note:** The blowout and well-release impairment frequencies retain the conservative Stena DrillMAX QRA basis and do not take quantitative credit for the additional project-specific E-SID risk reduction. In reality, the specific PLL value from blowouts and well releases will be significantly reduced, by implementing the ALARP measure of E-SID inclusion in the project design.

The calculated Temporary Refuge (TR) impairment frequency is dominated by helicopter crash and fire events, which account for approximately 82.8% of the total. Blowouts and well releases contribute approximately 17.0%, while fire, explosion and toxic release events contribute approximately 0.2%. These percentages apply only to TR impairment, not to the impairment of other main safety functions or to the overall project risk.

Reductions in stability and structural failure are the principal contributors to impairment of escape routes, evacuation systems and structural integrity, followed by ship collision. These events do not contribute directly to the calculated TR impairment frequency. All calculated impairment frequencies remain below the applicable acceptance criteria.

The highest total impairment frequency is associated with evacuation systems, at 9.00E-06 per year. This remains below the total impairment criterion of 5.0E-04 per year. Each individual accidental-event contribution also remains below the applicable criterion of 1.0E-04 per year per accidental load.

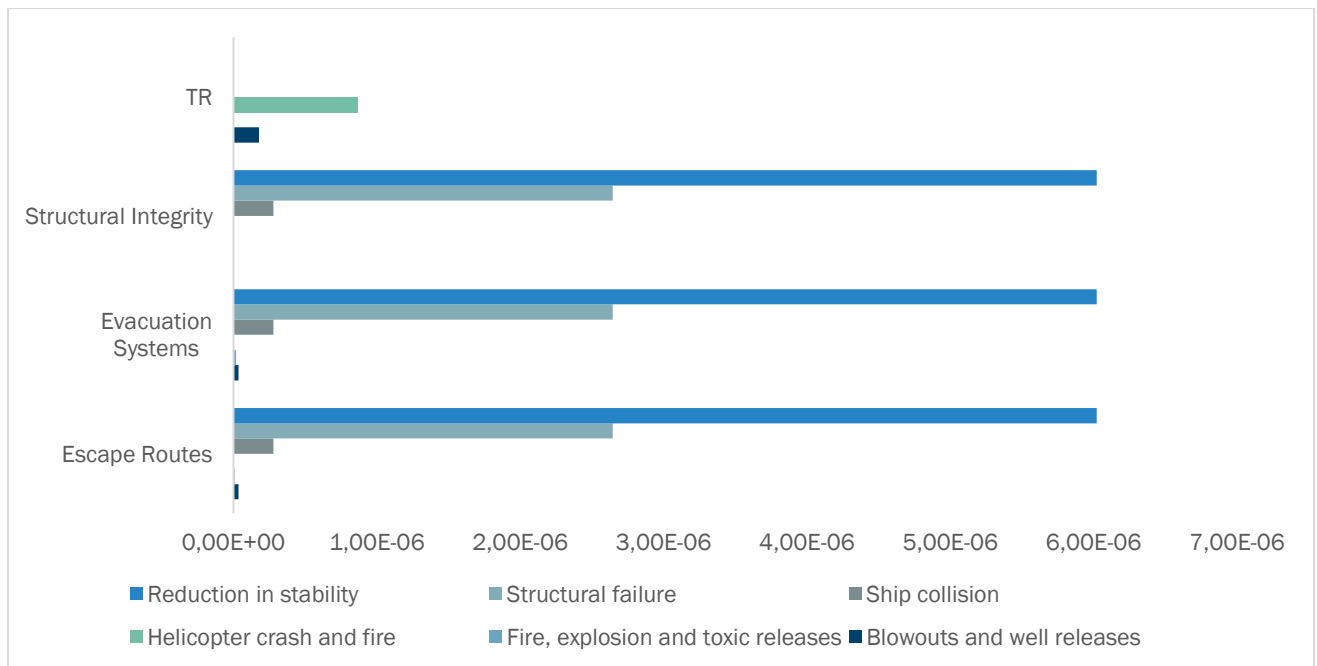


Figure 9-45: MSFs Impairment Frequency per year

## 9.8.5 Assessment against risk acceptance criteria

### 9.8.5.1 Personnel risk

The overall IRPA for the most exposed worker group is  $4.5\text{E-}05$  per year. This is significantly below the HEREMA upper tolerability limit of  $1\text{E-}03$  per year and therefore satisfies the individual risk acceptance criterion.

Excluding helicopter transportation risk, the facility-related FAR associated with the Asopus-1 drilling campaign is 2.16 fatalities per  $10^8$  exposed hours, which is below the FAR acceptance criterion of 10 fatalities per  $10^8$  exposed hours. The FAR acceptance criterion is therefore met.

A comparison of FAR levels reported for offshore operations in the UK and Norway shows no consistent overall trend. Globally, FAR levels in Europe are generally at the lower end of the observed range and are broadly comparable with those reported in Canada, the USA and Australia.

### 9.8.5.2 Main safety function integrity

All Main Safety Function impairment frequencies are below the applicable acceptance criteria. The highest impairment frequency is associated with the evacuation systems at  $9.0\text{E-}06$  per year, which is well below the criteria of  $1.0\text{E-}04$  per year for individual accidental loads and  $5.0\text{E-}04$  per year in total.

### 9.8.5.3 TR Integrity

The calculated TR/LQ impairment frequency for Asopus-1 is 1.05E-06 per year, which is below the applicable Main Safety Function acceptance criteria of 1.0E-04 per year for each individual accidental load and 5.0E-04 per year in total. This demonstrates compliance with the applicable TR/LQ integrity criteria.

## 9.9 Uncertainty and limitations

The main uncertainties relevant to the assessment are summarised below. These uncertainties do not invalidate risk assessment, but they define the basis on which the results should be interpreted and identify the assumptions that should be verified before operations commence.

- Statistical uncertainty in data sources - The risks have been calculated using some industry generic data from the QRA as a basis. The databases reflect the industry's experience over many years of exposure. As typical MODUs are designed not to suffer catastrophic failure, the failure data population is generally small, introducing a degree of uncertainty.
- Applicability of the data sources and models to the MODU - The data sources for the assessment have been selected from marine experience and offshore experience as appropriate. The drillship was built and is maintained in accordance with classification rules common to other MODUs. Existing databases representing good practice are appropriate for assessing hazards for which there is broad experience, including most of those considered.
- Uncertainty in assumptions with respect to the operating conditions - The QRA assessment is based on pre-drill estimates and available geological and geophysical information at the time of assessment. As the Asopus-1 well has not yet been drilled, actual subsurface conditions, including reservoir characteristics, formation pressures and fluid properties, may differ from those assumed. The assessment therefore incorporates conservative assumptions where appropriate and should be reviewed if material new information becomes available during well planning or operations.
- The IRPA, PLL and helicopter transportation results depend on the assumed POB, worker-group distribution, personnel movements, flight frequency, flight duration and campaign duration. These assumptions shall be verified against the final campaign manning, and logistics plans before operations commence. Where the final assumptions differ materially from those used in the QRA, the affected risk results shall be reviewed and updated.

The QRA developed through an integrated modelling approach is subject to limitations arising from the assumptions, simplifications, and uncertainties inherent in the modelling techniques used. The assessment relies on available operational information, which may not fully reflect actual operating conditions. Furthermore, the complex interactions between hazards and emergency response effectiveness cannot be fully represented within the integrated modelling approach adopted for the assessment.

Model predictions should be regarded as indicative of potential spill behaviour rather than forecasts of actual outcomes. Importantly, oil spill models typically do not account for the effects of response and clean-up operations, such as containment, recovery, dispersant use, or shoreline protection measures, which can substantially reduce the extent and persistence of oil contamination. Consequently, while modelling provides a valuable tool for risk assessment, contingency planning, and understanding potential environmental

consequences, the results are unlikely to be fully representative of a real spill incident and should be interpreted within the context of these inherent uncertainties and conservative assumptions.

## 9.10 Dimensioning accidental loads assessment

As per the existing Stena DRILLMAX QRA, a specific explosion analysis was carried out in the design risk assessment for the moonpool, drill floor and shaker house areas to calculate maximum explosion overpressures and pulse durations for these areas. The following categories are used to define the accidental loads,

- Fire and explosion loads.
- Impact loads including dropped object, helicopter impact, and ship collision loads.
- Extreme weather and unintended flooding loads.

### 9.10.1 Fire and explosion loads

The governing fire and explosion loads considered in the assessment are associated with blowout scenarios. Loads from machinery space and TR fires are not explicitly calculated in this assessment. The COMEX programme is used to estimate the maximum explosion overpressures in the QRA assessment. Thereafter, if necessary for the case considered, the program NVBANG Version 3 was used to consider the effect of a different gas, such as methane, possible walls being released during the explosion and venting of burnt gas at an early stage of the explosion.

The duration of the overpressure is calculated by using the program NVBANG. The COMEX programme was also used to assess the impact on the TR module aft wall. Explosion overpressures are calculated for a stoichiometric propane mixture. This represents the worst-case leak composition for hydrocarbon mixtures likely to be encountered.

#### 9.10.1.1 Blowout fire

##### 9.10.1.1.1 Temporary refuge

These conservative blowout loads are retained as the DrillMAX design accidental-load basis for personnel and structural safety and are separate from the representative environmental release scenario adopted for the ESIA.

As per NMA regulation, “Exterior faces of accommodation spaces and control stations facing the drilling or production area shall at least be insulated to A60 standard. Based on the results of risk analyses/calculation of design fire, class H fire divisions may be required”.

As per PSA Facilities regulations, “TR outer walls facing a processing or drilling area and which may be exposed to fire from these shall be H60 if there is potential for heat loads greater than 100 kW/m<sup>2</sup> and all other outer walls shall be A60”.

It has been identified that no events would result in an impinging fire or a heat load exceeding 100 kW/m<sup>2</sup> on the external TR bulkheads. Therefore, A60-rated bulkheads would survive for at least 1 hour and are consequently considered sufficient. The backup DP room windows should be suitably rated to withstand the impact of an explosion from the drill floor, moonpool or shale shaker areas.

#### 9.10.1.1.2 Drill Floor and Derrick Structure

The drill tower structure could be exposed to heat fluxes ranging from 200 kW/m<sup>2</sup> to 300 kW/m<sup>2</sup> in the event of an ignited blowout. NORSOK S-001 and OS-A101 both specify a value of 250 kW/m<sup>2</sup>. If the move-off after a blowout is successful, the above heat loads would last at most 5 minutes. The likelihood of an ignited blowout in which move-off is unsuccessful is assessed as considerably lower than 1E-04 per year and is therefore not considered a governing Design Accidental Load (DAL) scenario. The design explosion overpressure is calculated to be 5 kPa (0.05 bar) combined with a pulse duration of 0.19 s.

The worst-case scenario is expected to be an explosion with ignition near the floor in the middle of the drill floor area (Figure 9-46), with an approximate volume of 4200 m<sup>3</sup>. The area is moderately congested, and the equipment is mainly placed near the floor. The area is partly open on the forward or aft side through one of the pipe-entering doors. With the only cladding along the edges, upward venting is very large. The twin drill tower and haulage devices also block the upward venting. Downward explosion venting is prevented by the solid drill floor. The total explosion-venting area of approximately 700 m<sup>2</sup> is extremely large for this size. Most of the walls comprise light cladding panels that are expected to fail at approximately 10 kPa (0.1 barg), thereby providing explosion venting.

The maximum explosion overpressure is expected to be 5 kPa (0.05 barg) when the area is 100% filled with a stoichiometric mixture of air and propane. The overpressure pulse is shown in Figure 9-47. For input to a structural response assessment in the area, the explosion impulse could be adequately modelled as a triangular pulse with a duration of 190 milliseconds.

The graph displays the pressure response of the Drillfloor over time. The y-axis represents Pressure in kPa, ranging from 0 to 5. The x-axis represents Time in seconds, ranging from 0 to 0.8. The pressure is stable at zero until approximately 0.55 seconds, after which it begins to rise. It reaches a peak of approximately 4.8 kPa at 0.78 seconds and then drops sharply to zero.

| Time (s) | Pressure (kPa) |
|----------|----------------|
| 0.0      | 0.0            |
| 0.1      | 0.0            |
| 0.2      | 0.0            |
| 0.3      | 0.0            |
| 0.4      | 0.0            |
| 0.5      | 0.0            |
| 0.55     | 0.0            |
| 0.6      | 0.2            |
| 0.65     | 0.5            |
| 0.7      | 1.0            |
| 0.75     | 2.5            |
| 0.78     | 4.8            |
| 0.8      | 0.0            |

### 9.10.1.1.3 Moonpool

In the event of an ignited blowout below the drill floor, the moonpool area (Figure 9-48) could be exposed to heat fluxes ranging from 200 kW/m<sup>2</sup> to 300 kW/m<sup>2</sup>. The port crane pedestal could also be exposed to this heat load if it is impinged by a jet fire. As for drill floor blowouts, if move-off is successful, the above heat loads would last at most 5 minutes. The worst-case explosion scenario is expected to be an ignition near the starboard wall in this large area, with a volume of approximately 42 000 m<sup>3</sup>. The area does not have much congestion, and the equipment is mainly placed on the upper deck and down in the moonpool near the boundaries. The pipe stand in this area is assumed to be 1/3 full, which increases congestion. The area is partly open on all sides except forward. Downward explosion venting is not possible through the moonpool. The total explosion-venting area of approximately 2900 m<sup>2</sup> is extremely large for this size. Some areas of the upper deck are fitted with light cladding panels that are expected to fail at approximately 10 kPa



overpressures, thereby providing explosion venting. Their weight is assumed to be 21 kg/m<sup>2</sup>. The clad area is assessed to be 170 m<sup>2</sup>.

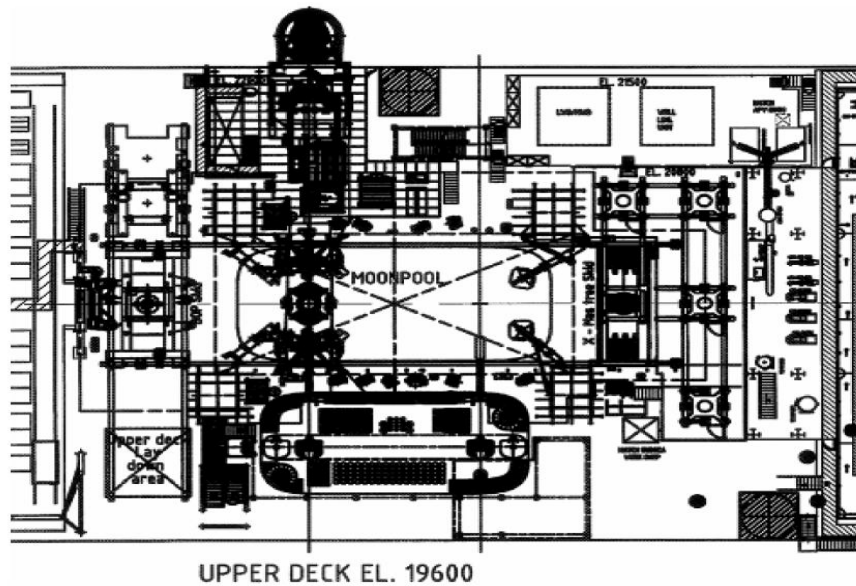


Figure 9-48: Moonpool Area Layout

The maximum explosion overpressure is expected to be 40 kPa (0.4 barg) when the area is 100% filled with a stoichiometric mixture of air and propane. The overpressure pulse is shown in Figure 9-49. For input to a structural response assessment in the area, the explosion impulse could be adequately modelled as a triangular pulse with a duration of 170 milliseconds. The pressure will be spread forward towards the TR. The explosion in the moonpool area covers a large volume, and the pressure on the aft TR module wall is expected to be the same as in the moonpool area: 40 kPa (0.4 barg) for 130 milliseconds. A triangular pressure pulse shape can be used. The aft TR wall may experience local damage if exposed to this overpressure. However, the SDL assessment concluded that the bulkhead maintains its structural integrity and can withstand the design explosion load.

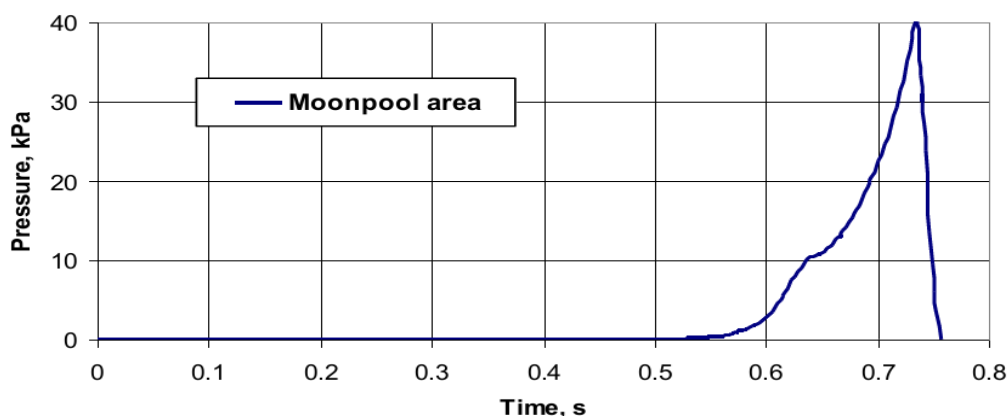


Figure 9-49: Moonpool Area - Pressure Vs Time Profile

#### 9.10.1.1.4 Shale shaker house

In the event of an ignited blowout in the shale shaker room (Figure 9-50), the entire room would be engulfed with flames and subjected to heat fluxes ranging from 200 kW/m<sup>2</sup> to 300 kW/m<sup>2</sup>. As for drill floor blowouts, if move-off is successful, the above heat loads would last at most 5 minutes.

The worst-case explosion scenario is expected to involve ignition near the starboard wall of this medium-sized area, with an approximate volume of 1200 m<sup>3</sup>. The area contains 4 shale shakers, desilter, degasser and some tanks. The area is relatively congested and almost closed in all directions, with only the mechanical ventilation system open to the surroundings. An access ladder and some small openings down to the area below give a small venting possibility downwards. The total explosion-venting area is extremely small for an area this size. The room has 3 doors and some walls that are expected to open up in the explosion. They are assumed to weigh 30 kg/m<sup>2</sup> and start opening at an overpressure of 200 kPa (2 barg).

The maximum explosion overpressure is expected to be 220 kPa (2.2 barg) when the area is 100% filled with a stoichiometric mixture of air and propane. The overpressure pulse is shown in Figure 9-51. For input to a structural response assessment in the area, the explosion impulse could be adequately modelled as a triangular pulse with a duration of 600 milliseconds.

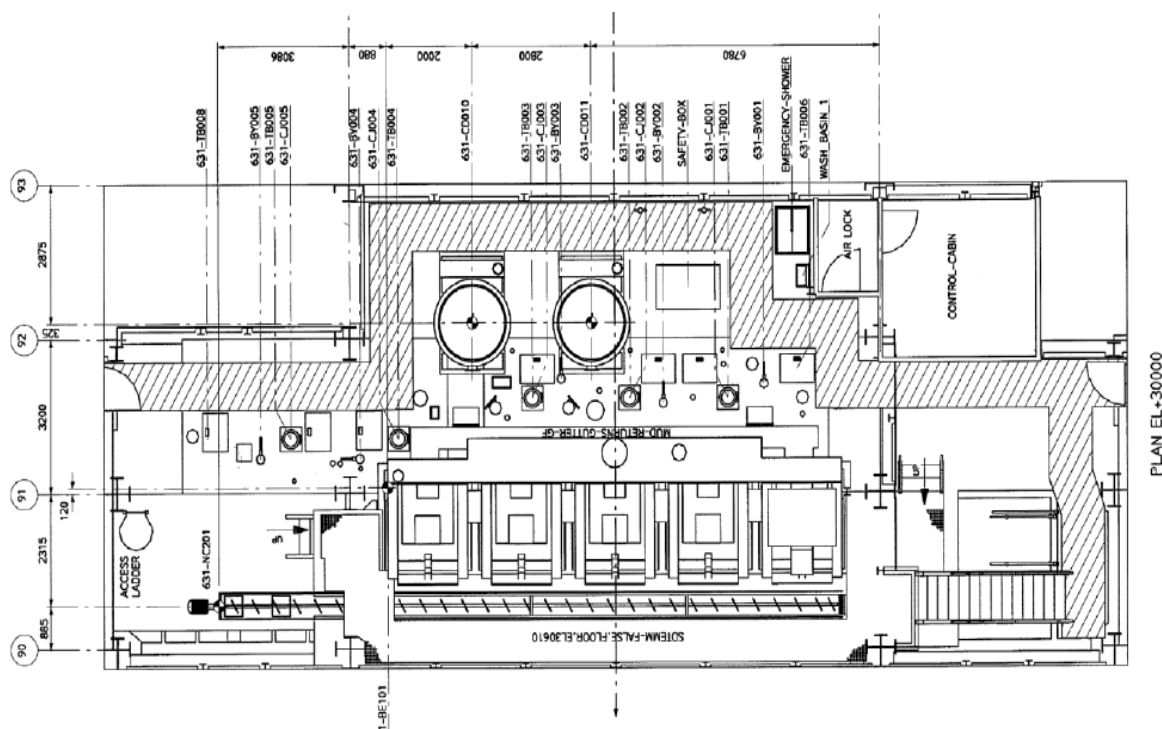


Figure 9-50: Shale Shaker Area Layout

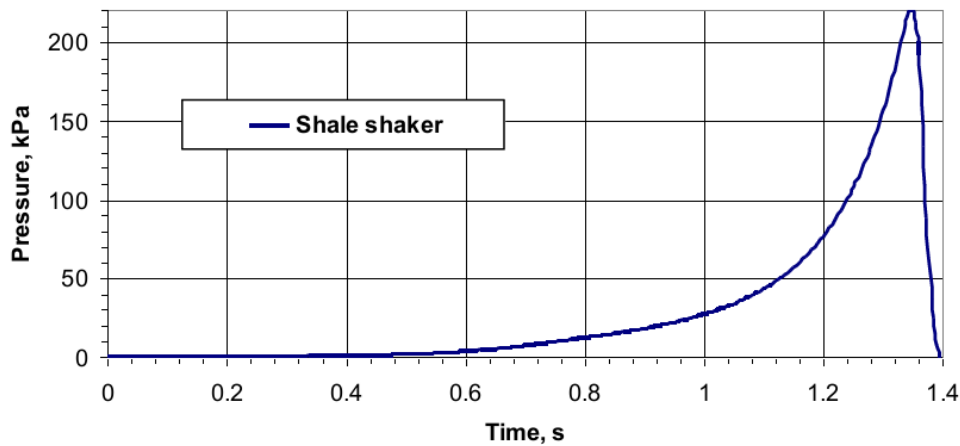


Figure 9-51: Shale Shaker – Pressure Vs Time Profile

## 9.10.2 Impact loads

### 9.10.2.1 Dropped objects

In the context of dropped objects, critical areas typically include TR, workshops, storage areas for pressurised gas and hydrocarbon equipment. Identified critical areas for the MODU include,

- TR, wheelhouse, control room, and backup DP room.
- Switch / transformer room above the mud pits / mud pumps.
- Subsea control area, HPU area and APV area.
- Setback area.
- Fuel oil storage tank and adjacent void spaces (protection provided by plated deck above).
- Engine rooms and engine control room.

### 9.10.2.2 Helicopter impact

The helideck is located forward on a platform at deck 12 above the bridge deck and LQ. It is designed, constructed, and maintained to the requirements of:

- UK Civil Aviation Authority (CAA) CAP 437;
- Norway BSL D5-1; and
- DNV-OS-E401, “Helicopter Decks.

### 9.10.2.3 Ship collision

Collision design accidental loads are represented by a kinetic energy of 11 MJ for bow or stern impacts and 14 MJ for sideways impacts, corresponding to a 5,000-tonne supply vessel travelling at 2 m/s. These values are taken as the minimum credible design cases for supply vessel collisions.

More severe impacts can occur from larger merchant vessels or higher approach speeds. Based on published work on ship collision mechanics, only collisions with energies more than 100 MJ are considered to present a realistic potential for impairment of the drillship's main safety functions. Below this threshold, damage is expected to be limited to localised hull structures and non-critical tanks.

Where collision energies are sufficient to breach hull tanks containing diesel or base oil, the most significant consequence is expected to be environmental release, with a low probability of ignition given the high flash points of these products. In extreme cases where collision energies exceed structural capacity, loss of vessel stability and associated personnel risk cannot be excluded.

### 9.10.3 Extreme weather

A feature of the MODU design is a setback area recessed into the hull that could be flooded in severe weather.

Buoyancy loss and subsequent flooding may result from subsea blowout. For a DP vessel in water depths of at least 250 m (minimum operating water depth for the drillship), the probability of loss of buoyancy or a displacement of significance to the stability is considered to be low as the dynamic forces of a rising gas plume would tend to push the vessel away from the centre of the plume and away from the least buoyant areas. Given the Asopus-1 water depth of approximately 840 m, the loss of buoyancy due to a subsea gas plume is not considered a credible dimensioning accidental event.

The dimensioning accidental loads and design accidental loads are summarised in Table 9-34 and Table 9-35.

**Table 9-34: Dimensioning Accidental Loads**

| DIMENSIONING EVENT                                 | AREA                                          | LOAD                                                                                                    |
|----------------------------------------------------|-----------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Blowout                                            | TR                                            | Less than 100 kW/m <sup>2</sup> for 30 minutes (minimum rating for outer walls A60 as per regulations). |
|                                                    | Drillfloor and drill tower                    | 250 kW/m <sup>2</sup> for 5 minutes<br>0.05 bar, pulse duration 0.19 seconds                            |
|                                                    | Moonpool                                      | 250 kW/m <sup>2</sup> for 5 minutes<br>0.4 bar, pulse duration 0.17 seconds                             |
|                                                    | Shale shaker house                            | 250 kW/m <sup>2</sup> for 5 minutes<br>2.2 bar, pulse duration 0.6 seconds                              |
| Dropped objects                                    | Geeral                                        | As per DNV-OS-A101                                                                                      |
|                                                    | Recessed setback area                         | To be defined based on dropped object analysis                                                          |
|                                                    | Wheelhouse / control room and back-up DP room | To be defined based on analysis of small forward crane usage                                            |
| Helicopter crashes                                 | Helideck                                      | As per DNV-OS-E401                                                                                      |
| Ship collisions                                    | Hull                                          | As per DNV-OS-A101                                                                                      |
| Extreme weather including flooding of setback area | Hull                                          | Not credible                                                                                            |

Table 9-35: Design Accidental Loads

| AREA               | ACCIDENT TYPE      | ITEMS TO BE PROTECTED                                 | LOADS TO BE DESIGNED FOR OR RECOMMENDED PROTECTION METHOD                                                                                                                                                                                                       |
|--------------------|--------------------|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TR                 | Internal fire      | Partitions (walls, floor, roof)                       | NMA minimum requirements or equivalent                                                                                                                                                                                                                          |
|                    | External fire      | All external surfaces (except floor)                  | Bulkheads facing drilling area:<br>- 100 kW/m <sup>2</sup> for 5 minutes<br>Roof of TR/wheelhouse:<br>- 100 kW/m <sup>2</sup> for 5 minutes<br>Bulkheads facing drilling area and the roof of the TR/wheelhouse to be A-60. Bulkheads facing the sea to be A-0. |
|                    |                    | Floor                                                 | Fire on sea surface:<br>- 100 kW/m <sup>2</sup> for 5 minutes                                                                                                                                                                                                   |
|                    | External explosion | Walls facing drilling area and roof of TR             | Explosion effect on TR from explosion on moonpool:<br>-0.4 bar overpressure                                                                                                                                                                                     |
| Upper deck         | External fire      | Steel structure (primary load-carrying steel members) | 60 kW/m <sup>2</sup> for 5 minutes                                                                                                                                                                                                                              |
|                    |                    | Exposed safety critical equipment                     | 60 kW/m <sup>2</sup> for 5 minutes                                                                                                                                                                                                                              |
|                    | Dropped objects    | Pipe storage areas                                    | Drop of heaviest tubular from storage height or height during transport to drillfloor (whichever is critical)                                                                                                                                                   |
|                    |                    | Roof of shaker house                                  | 3.11 tonne drill collar from 3m<br>2.42 tonne 20" casing from 3 m                                                                                                                                                                                               |
|                    | Fire               | Primary steel                                         | 250 kW/m <sup>2</sup> for 5 minutes                                                                                                                                                                                                                             |
| Drilling Tower     | Explosion          | Primary steel                                         | Overpressure of 0.1 bar combined with pulse duration of 0.2s as quoted in OS-A101 should be adopted. If special winterisation cladding is adopted in the design, then this value should be re-assessed.                                                         |
|                    | Fire and explosion | Vital equipment for well control                      | Equipment exposure will depend on location. All systems required for disconnection of the riser and closing of the BOP to remain intact.                                                                                                                        |
|                    | Dropped objects    | Drillfloor, mouse hole and rat hole                   | DAL to be specified by drilling package vendor.                                                                                                                                                                                                                 |
| Shale shaker house | Explosion          | Walls                                                 | The design explosion overpressure quoted in OS-A101 is 200 kPa (2 bar) combined with a pulse duration of 0.2s.                                                                                                                                                  |
|                    | Ignited blowout    | Safety critical equipment                             | Safety critical systems should not be run through the shaker house.                                                                                                                                                                                             |
|                    | Ignited blowout    | Primary structural sheet                              | 100 kW/m <sup>2</sup> for 5 minutes.<br>A sufficient no. of engine rooms shall remain unimpaired to successfully relocate the vessel within 5 minutes.                                                                                                          |

## 9.11 Escape and evacuation assessment

The philosophy adopted for dimensioning the escape routes is identified in Table 9-36 below,

**Table 9-36: Primary and Secondary Escape Routes**

| DESIGNATION | DEFINITION                                                                                                         |
|-------------|--------------------------------------------------------------------------------------------------------------------|
| Primary     | Escape route from permanently manned areas and intermittently manned areas with higher levels of personnel traffic |
| Secondary   | Escape route from normally unmanned areas and intermittently manned areas with little personnel traffic            |

### 9.11.1 Primary (main) escape routes

The primary escape routes aboard the Stena DrillMax are fully enclosed escape tunnels that run the length of the vessel, one on the port side and one on the starboard side. These tunnels allow personnel to move from aft to the TR whilst protected against the effects of fire and explosion. The portside tunnel has three access points: one aft, one at the accommodation, and one forward of the APV/subsea control areas. The starboard escape tunnel has four access points: one aft, one at the accommodation, one forward of the APV/subsea control areas, and one aft of the setback area adjacent to the upper deck laydown area.

### 9.11.2 Secondary (local) escape routes

#### 9.11.2.1 TR and offices

During an emergency on the vessel, personnel located in the accommodation will have direct access to the muster area in the mess hall on general alarm. In general, personnel can use the central staircase in the accommodation to move between deck levels. To access the lifeboat muster station on deck level 9, personnel must leave the accommodation by the port or starboard external staircase, climb a flight of stairs, and then descend a flight of stairs to reach the walkways to the lifeboats. Personnel could also escape to the aft of the vessel via the internal escape routes along the port and starboard sides.

#### 9.11.2.2 Moonpool area

Personnel can use the escape ways at upper deck level to access the escape tunnels from forward of the subsea control/APV areas (around 20 m forward) or from the access point adjacent to the upper deck laydown area on the starboard side (around 10 m aft).

#### 9.11.2.3 Drill floor and derrick

Personnel can proceed and use the stairways above the mud processing module to descend one flight to deck level 9, where they can access the temporary refuge by walking approximately 35 m along the open deck. If this route is impaired, they may travel rearward to the stairs behind the setback area, where they can descend approximately 25 m to the upper deck level and access the starboard-side escape tunnel adjacent to the laydown area.

#### 9.11.2.4 Mud process module

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Personnel can use the internal staircase at the aft centre of the mud processing module to descend to upper deck level, where they can access the escape tunnels on either the port or starboard side.

#### 9.11.2.5 Cranes

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The drillship is equipped with three 85 te deck cranes (1 port and 2 starboard). In addition, there will be a small crane forward for servicing the helideck, and dedicated pipe-handling equipment both forward and aft of the drill tower. Crane operators must descend the stairs from the operator's cabin, then use the escape tunnel access aft of the upper lay down area. An alternative access point is located forward of the subsea control/APV areas.

### 9.11.3 Temporary refuge and muster area

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The TR and primary muster area are located in the accommodation at the forward of the vessel. The mess hall area on deck level 5 is the proposed muster area. NORSOK S-001 states that all muster areas shall be suitably sized to enable efficient accounting of personnel and donning of personal protective equipment (0.4 m<sup>2</sup> per lifeboat seat).

As the proposed muster area is in the same place for all lifeboats, the required area is 0.35 m<sup>2</sup> per person in line with SOLAS requirements. For a maximum POB of 180, this gives a required area of 63 m<sup>2</sup>. The area of the proposed muster area is 186.7 m<sup>2</sup>, which is sufficient.

The wheelhouse and main control room are located on the top level of the accommodation and normally contain all the necessary command-and-control functions expected in a TR. The backup DP room is also located on the top deck of the accommodation and is protected by A60 bulkheads.

#### 9.11.4 Lifeboat provision

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The Stena DrillMAX has two 54-man freefall lifeboats positioned forward of the accommodation on the port and starboard side, along with a single 60-man and a single 54-man lifeboat at the aft. The centrally located lifeboats at the aft can contribute to both port and starboard lifeboat provision, providing 100% capacity on both sides in line with SOLAS requirements. The lifeboats can be launched at a heel angle of 20 degrees.

The proposed number and location of lifeboats are considered adequate, as the enclosed primary escape routes along the port and starboard sides of the vessel mean that the probability of anyone being trapped at the aft end of the vessel is considered remote.

If only one side of the drillship lifeboats is available to launch, a total of 108 persons would be able to escape via the forward lifeboats. If one of these lifeboats failed to launch or was out of service for maintenance, then persons would be required to escape via the aft lifeboats.



### 9.11.5 Liferaft provision

The NMA Lifesaving Regulation (section 11) requires that:

1. There shall be sufficient liferaft capacity for the total number of persons on board.
2. The location of the liferafts shall be based on the evacuation analysis (cf. section 5).
3. On ship-shaped units, it shall be possible to evacuate all persons on board using liferafts, even if the liferafts on any one side are lost or unavailable.
4. Where the distance from the extreme end of the stem or stern to the nearest lifeboat or liferaft is more than 100 metres, an extra liferaft shall be arranged at the stem or stern.
5. Liferafts shall be arranged in marine evacuation systems (MES). Alternatively, liferafts may be placed on separate davits, with no more than three liferafts per davit.

Liferafts shall be certified for launch from the relevant heights at the unit's least favourable heel angle. In addition, the PSA facilities regulations state "As means of evacuation in respect of evacuation to sea, free-fall lifeboats supplemented by escape chutes and associated life rafts shall be used." NORSOK S-001 states that "escape chutes with rafts should be used as a secondary means of evacuation in the main evacuation area".

Based on the above, liferafts with a total capacity of 426 (213 port and 213 starboard) are provided; made up of 12 x 35-man liferafts (6 liferafts port forward and 6 liferafts starboard forward) along with one 6-man throw-over liferaft located aft.

There are four liferaft hoists forward, each assigned 3 liferafts. An embarkation ladder is situated beside the liferaft stations on both sides of the vessel. Escape means from the aft is currently provided by the 6-man throwover liferaft and 2 lifebuoys, 1 port and 1 starboard. There are lifebuoys located along the length of the vessel on both port and starboard sides.

### 9.11.6 Escape and evacuation time

The time required for a safe escape and evacuation has been estimated using generic data and the drillship's dimensions and layout. The escape and evacuation process has been divided into steps to aid the time estimation. The worst-case scenario is personnel in the cabin of the riser storage area crane being unable to move forward due to a fire or explosion on the drill floor or moonpool area. This would mean descending the crane ladder to upper deck level at the riser storage area, accessing the enclosed escape tunnel through the starboard entrance slightly forward of the crane to reach the temporary refuge and muster in the mess hall.

The total time to muster and evacuate using lifeboats is estimated to be 15 minutes. This is comparable to the NMA regulation requiring that all persons on board can be evacuated by lifeboats within 15 minutes, regardless of weather conditions. This is measured to the point where lifeboats are launched and released.

This timeline is considered to represent the fastest possible time for an orderly evacuation it is not an evacuation time design basis for the TR. To fully assess an emergency and prevent unnecessary evacuation,

and to execute a full, orderly evacuation, including the rescue of trapped personnel, a 30-minute evacuation time is considered more reasonable.

### 9.11.7 Evacuation and escape fatalities

For a blowout or an impending ship collision the drillship would attempt to move-off location. Evacuation of personnel from the vessel would only be required if move-off was unsuccessful. In the case of the evacuation of non-essential personnel, this will be done by helicopter (if available). Lifeboat evacuation would only be attempted if helicopter evacuation were not possible, either due to the drillship's list or insufficient time.

The probability of successful launch of a free-fall lifeboat has been taken as 95.6%.

The probability of unsuccessful escape via liferafts has been calculated based on the following,

- Personnel end up in water (calm weather) 0.03
- Personnel end up in water (moderate weather) 0.25
- Personnel end up in water (severe weather) 0.50

The probability of successful recovery from the sea to a place of safety is calculated based on estimated recovery and survival times, depending on sea temperature and the type of clothing (assumed to be survival suits and lifejackets) worn. In the event of failed lifeboat or liferaft evacuation, some people are assumed to become immediate fatalities, and some are assumed to enter the water. The liferafts and lifeboats are all supplied with embarkation ladders.

## 9.12 Risk reduction and ALARP demonstration

The hazard identification and risk evaluation process supports the demonstration that all major accident hazards (MAHs) have been identified and understood and are being effectively managed. The risks presented in Section 9.8 measure the risk from identified MAH against defined acceptance criteria and conclude that the risk levels on the MODU are tolerable. Section 9.8 also highlights the main risk contributors, i.e. those hazards that contribute most to the overall risk on the vessel and identifies additional measures capable of reducing the risk from the MAHs.

Each risk reduction option has been assessed for effectiveness and potential benefit. Where a measure is deemed not practicable, the rationale for non-implementation is documented. The SDL Action Register contains identified risk-reduction measures and their implementation status. This register is regarded as a living document and an essential element of the SDL risk management process; thus, it is continuously updated to reflect the current state of all recommended risk-reducing measures.

Project-specific risk reduction measures identified for the Asopus-1 campaign are managed through the applicable drilling, HSE and project assurance processes.

### 9.12.1 Blowouts

Prevention of uncontrolled release of fluid from the well starts with adequate well planning. The primary means of well control is to maintain the primary barrier with suitable hydrostatic pressure through

appropriate drilling fluid density, MPD surface backpressure, and continuous monitoring of parameters to adjust the density as required. Failure of these measures will activate the secondary well control barrier, the blowout preventer (BOP). The well-control strategy incorporates multiple layers of protection, including the primary well barrier, the subsea BOP system and the project-specific E-SID. The E-SID provides an additional independently actuated shear-and-seal capability at the wellhead, supplementing the primary and secondary well-control barriers.

The strategy meets or exceeds applicable class requirements and international codes and is consistent with standard industry practice. It has been evaluated for suitability and is considered adequate for controlling the risk from blowout and well release hazards. The MODU is designed to operate in deep waters with a minimum operating water depth of 250 m, and this exploration well's water depth is 840 m. This reduces the risk to the installation and people on it from shallow gas blowouts.

For the Asopus-1 campaign, Energean will deploy the K-BOS E-SID as a pre-positioned subsea emergency shut-in device installed below the Stena DrillMAX BOP stack. The E-SID provides an additional independent wellhead barrier and helps reduce the likelihood and potential for escalation of loss-of-well-control events.

For the Asopus-1 campaign, Energean will deploy the K-BOS E-SID as a pre-positioned subsea emergency shut-in device installed below the Stena DrillMAX BOP stack. The E-SID provides an additional, independently actuated shear-and-seal capability at the wellhead and reduces the likelihood of escalation following failure of the conventional well-control barriers. The combined BOP and E-SID configuration reduce the estimated probability of an uncontrolled blowout to approximately  $2.08 \times 10^{-8}$  per well. As a project-specific risk-reduction measure, the E-SID provides material additional protection and supports the demonstration that well-control risks have been reduced to ALARP.

## 9.12.2 Mud processing area

### 9.12.2.1 Fire and explosion protection

The shale shaker room, mud pits and mud pump rooms constitute the mud process areas. The shaker room is located forward of the drilling areas while the mud pits and mud pumps are located within the hull of the vessel. The shaker room and mud pits have been identified as areas that are prone to fire and explosion and have been protected accordingly. They are classified as zone 1 (a zone in which an explosive atmosphere is likely to occur during normal operation) hazardous areas and are negatively pressurised via mechanically forced ventilation to prevent build-up of flammable gas.

Detectors are also installed to detect the presence of flammable gas. Fire-fighting in the mud process area is supplied by low-expansion foam, and additional protection is provided by the A60-rated fire wall around the boundaries of the shaker room.

Given the congestion in the shale shaker room, an explosion study was undertaken to evaluate the maximum overpressure. The maximum overpressure was estimated to be 2.2 barg. The potential consequences of the design explosion overpressure have been assessed in the existing Stena DrillMAX design risk assessment. Essential safety systems required following the event are assumed to remain available or to be suitably segregated from the affected area, consistent with the design accidental-load basis.

The quantitative risk analysis has also shown that the contribution of drilling-related fire and explosion hazards to the overall risk profile of the DrillMAX is very low.

#### 9.12.2.2 Operator's cabin zone classification

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The Operator's Cabin was initially classified as a hazardous area; thus, it was recommended that the necessary design changes be implemented to make it a safe area, including overpressure ventilation. As the entrance door has now been moved to an unclassified area (cement unit), overpressure ventilation inside the cabin is considered unnecessary.

#### 9.12.2.3 CCTV provision in the operator's cabin

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It was observed that the initial arrangement in the mud process area prevents the operator from seeing the shakers from the cabin. SDL has reviewed the need for a CCTV provision and has now installed one in the shale shaker room. This will facilitate monitoring of the shaker room.

### 9.12.3 Non process fires

#### 9.12.3.1 Engine room protection

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Although the bulkheads separating the engine rooms are A-60-rated, there was concern about the adequacy of the A-0-rated engine room deck heads. The concern relates to the vulnerability of the engine rooms to fire in the well-test and drill-floor areas.

The risk analysis has quantitatively evaluated the likelihood of a well test and drill floor fire impairing the engine deck head and concluded that the frequency of this event is very low in the order of 10<sup>-5</sup> per year.

#### 9.12.3.2 Gas detectors in the engine and engine room air intakes

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It was assessed in the risk analysis that a gas release from the well test area could potentially be drawn into the combustion air and engine room air intakes – this is not relevant for Asopus-1 since no well testing is planned. For the MODU, risk is reduced by the current provision of 2 detectors at each air intake.

The engine room ventilation shall shut down automatically when gas is detected in the engine room air intake, while protection against gas ingress through the combustion air is provided by rig savers.

#### 9.12.3.3 Helicopter refuelling area protection

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The helideck refuelling tank is now located on deck 10 behind a firewall. The area is protected by a deluge system which can be operated remotely. In addition, the Heli guard station has been equipped with CCTV for improved fire monitoring. This provision reduces the likelihood of escalation of a helideck fire.

## 9.12.4 Escape route

### 9.12.4.1 Positive pressurisation

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The vessel is equipped with enclosed escape tunnels on the port and starboard sides that lead from aft to the accommodation block. HVAC systems comprising supply and exhaust dampers have been installed at the aft and forward port and starboard positions of the escape tunnel. The systems provide the needed pressurisation to prevent the ingress of smoke and gas into the tunnel.

### 9.12.4.2 Additional entrance to the escape tunnel

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An extra door has been added to the escape tunnel to facilitate escape from the drill floor and thus minimise exposure of people in this area to hazardous events. The initial arrangement would have required personnel to travel a long distance to reach the aft tunnel entrance if the forward one were unavailable.

### 9.12.4.3 Watertight doors obstruction

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It was observed that installing watertight doors in each escape tunnel would create an obstruction during escape due to the time required to open the hydraulic door manually or remotely. The current philosophy is to keep these doors open unless a visiting vessel is approaching.

## 9.12.5 Contingency source control measures

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While the QRA shows that a prolonged uncontrolled deepwater blowout is not the environmental assessment scenario for Block 2, maintaining contingency source-control measures remains both an operational requirement and a regulatory expectation, irrespective of the representative environmental assessment scenario adopted for the campaign. This subheading outlines escalation options if the primary well-control barriers fail, highlighting the availability of additional source-control capabilities beyond the installed BOP and E-SID barrier system.

In the unlikely event that the primary and secondary well control barriers fail to achieve shut-in, or well integrity is otherwise compromised, a source control and spill response strategy will be implemented to regain control of the well, minimise the duration of any release, and limit environmental consequences. The response framework comprises rig-based intervention, installed subsea shut-in capability, post-incident source-control measures, and oil spill response arrangements.

The initial response is to use the rig's well control systems, including the subsea BOP and its secondary activation paths, to shut in the well. Where required, the K-BOS E-SID provides an additional pre-installed subsea shut-in capability at the wellhead. If these measures do not achieve full isolation, source control may be escalated to capping, containment and, ultimately, relief well drilling.

These source control measures run alongside the campaign's oil spill response arrangement, covering spill monitoring, offshore response, shoreline protection planning, and coordination with specialist response

resources. Together, the well control, source control, and oil spill response elements form an integrated response framework for managing a loss-of-containment event.

#### 9.12.5.1 BOP intervention – secondary control systems

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As already described earlier, Stena DrillMAX subsea BOP is the primary mechanical shut-in device upon detection of a kick. It is equipped with a primary subsea control system and diverse backup activation paths. These secondary systems provide independent routes to close critical BOP elements rapidly if the main control system or the drilling unit is compromised.

#### 9.12.5.2 E-SID intervention – backup activation

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The K-BOS E-SID will be equipped with a secondary acoustic backup system, independent of the primary ROV-driven electrical activation pathway. This system may be operated remotely in the unlikely event that the MODU loses control capabilities. This redundant acoustic channel provides a backup actuation method, enabling authorised personnel at an alternative location to initiate E-SID closure and secure the wellbore.

The E-SID is deployed as a Layer 3 well-control barrier and is independent of the primary BOP control system. Successful activation may contribute to source-control outcomes by limiting or preventing continued release from the well.

#### 9.12.5.3 Well capping

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Well capping is the primary post-incident source-control measure when rig-based well control and E-SID intervention fail to achieve a full shut-in. A capping stack is a high-pressure isolation device installed on top of a failed BOP, LMRP, or wellhead to stop or significantly restrict well flow while also providing a mechanical interface for any subsequent containment or kill operations.

Energean's Tier 3 oil spill response and source-control capability for this campaign is based on established contractual arrangements and industry mutual-aid mechanisms that provide access to subsea source-control equipment, including capping and containment systems, where required. The scheme provides access to response-ready capping stack systems and subsea incident response toolkits, including 18-3/4-in, 15,000-psi capping stacks stored at strategic bases, with Stavanger, Norway, among the anticipated mobilisation locations for Block 2. The available equipment includes the capping stack itself, together with the ancillary subsea tooling required for survey, BOP intervention, debris clearance and related source control activities.

The feasibility and timing of capping depend on the condition of the incident well and the offshore environment at the time of response. Relevant factors include weather and sea state; the extent of any damage to the wellhead or BOP; the effects of sustained flow on well integrity; access to the well from above; plume behaviour; and the structural capacity of the well/BOP system to withstand the loads imposed during capping. These conditions are evaluated after the incident and used to confirm the capping method, interface configuration and installation sequence.







#### 9.12.5.4 Well containment

Well containment is a secondary source control option used when capping does not fully shut in the well, but a controlled flow path to a surface facility can be established. It involves creating a temporary subsea production system that routes hydrocarbons from the capping stack or wellhead through subsea flowlines and a marine riser to a suitably equipped vessel, where standard well-test equipment processes the fluids and the stabilised liquids are offloaded to a tanker.

Containment necessitates the prior installation and commissioning of the subsea system and the surface processing infrastructure and is therefore regarded as an infrequent fallback measure. It has the potential to mitigate environmental impact by restricting uncontrolled discharges. However, it does not supplant the need for permanent source control through a relief well and abandonment.

#### 9.12.5.5 Relief well drilling

Relief well drilling is the ultimate source control measure for permanently killing and abandoning an incident well. Although capping or containment may temporarily secure the well and reduce environmental impact, permanent abandonment still requires interception of the flowing well and placement of kill fluid and cement into the flow path.

For Asopus 1, a relief well would be planned as a directional well drilled to intercept the original wellbore at a suitable target depth. Once the intercept is achieved, dynamic kill operations would be undertaken by pumping kill fluid from the relief well into the incident well, followed by cementing to permanently seal the well. The detailed kill strategy would depend on the actual incident configuration and would take account of any capping or containment system already in place.

Relief well planning for Block 2 will therefore identify suitable relief well locations, required backup well-construction materials, and potential drilling units capable of operating at the relevant water depth and with the necessary dynamic positioning capability. A relief well may require the mobilisation of an additional suitable rig.

For planning purposes, a conservative relief well duration of approximately 80 days remains appropriate, subject to local conditions, rig availability and the condition of the incident well. This duration reflects the mobilisation of a suitable drilling unit, well design, logistics, drilling operations, interception, kill operations, and contingency allowances. Therefore, it is adopted as a conservative basis for planning and environmental assessment.

### 9.13 Conclusions and recommendations

A quantitative risk assessment has been carried out based on the previously conducted QRA study by DNV for the Stena DrillMAX, which is included in the RoMH submitted to HEREMA (Ref. Number: 36452/14.07.2026).

In this assessment, all credible hazards with the potential to cause a major accident have been identified, and the major accident risks have been evaluated against the applicable risk acceptance criteria and shown to be reduced to a level that is tolerable and as low as reasonably practicable.

The assessment has been carried out in compliance with the applicable Greek Statutory Provisions, guidance, and international industry safety standards. The following sections provide the main conclusions from the results of the risk assessment and the high-level review of the EER provisions.

Conservative blowout scenarios from the existing Stena DrillMAX QRA have been retained for personnel-risk assessment purposes. However, following incorporation of the project-specific K-BOS E-SID barrier, the representative environmental release scenario adopted for the ESIA is the instantaneous loss of 350 m<sup>3</sup> of MGO from a PSV fuel tank.

### 9.13.1 Personnel

The calculated risk levels satisfy the applicable risk acceptance criteria and have been demonstrated to be ALARP.

- The IRPA for each worker group has been calculated against an upper tolerability criterion of 1.0E-03 per year as follows:
  - Operational worker group : 4.50E-05 per year
  - Maintenance worker group : 4.47E-05 per year
  - Accommodation group : 2.59E-05 per year
- Excluding helicopter transportation, the facility related FAR is 2.16 fatalities per 100 million exposed hours, compared with the applicable acceptance criterion of 10 fatalities per 100 million exposed hours. The facility-related FAR acceptance criterion is therefore satisfied.
- Helicopter transportation has been assessed separately using actual flight-exposure hours, resulting in a FAR of 416 fatalities per 100 million flight-exposure hours. Because this value is normalised against actual flight hours rather than the total offshore exposure period, it is not directly comparable with the facility-related FAR acceptance criterion. Helicopter transportation risk is included in the IRPA and PLL results.
- The PLL is calculated to be 5.93E-03 fatalities per year. There is no maximum criterion associated with PLL and it is generally used for risk-benefit comparisons.

### 9.13.2 TR integrity

The frequency of accidental events which result in loss of the TR is 1.05E-06 per year.

- Provided that the credited HVAC isolation, damper sealing and TR integrity measures perform as assumed in the QRA, smoke is not predicted to impair the TR within its 60-minute endurance period.
- The calculated TR impairment frequency remains below the applicable acceptance criterion.

### 9.13.3 Evacuation, escape and rescue (eer)

The EER arrangements on the Stena DrillMAX have been revised in recent years. The capacity of the TEMPSCs has been reduced from 60 to 54 persons, and to compensate, Stena has installed an additional 60-person TEMPSC at the aft of the drillship.

This ensures that full evacuation remains possible if one side of the vessel is impaired.

#### 9.13.4 Comparative analysis

The risks associated with the proposed drilling of a single exploration well for the Asopus-1 project have been evaluated and compared with the base case (4-off HPHT wells) of the existing DrillMAX QRA. The proposed exploration well presents a lower risk profile than the reference case of four HPHT exploration wells per year. The principal reasons are summarised below and reflected in Table 9-37.

- The principal differences arise from the reduced operational scope, i.e., four (4) HPHT wells versus one (1) exploration well.
- Difference between helicopter flight hours and flights over the Asopus-1 drilling campaign period, assumed to be 70 days.
- The base case used a conservative full-flow gas release rate of 260 kg/s, whereas the proposed Asopus well gas release rate is 79 kg/s. The existing DrillMAX consequence basis has been retained as a conservative assessment.

The project-specific assessment produces lower calculated IRPA, PLL and TR impairment frequencies than the existing four-well DrillMAX base case. The differences primarily reflect the reduced operational scope and campaign exposure period, together with the project-specific exposure assumptions used in the assessment. The comparison is therefore a sensitivity comparison and not a like-for-like comparison between identical drilling programmes.

The frequency of accidental events leading to loss of the Temporary Refuge (TR) decreased from 6.77E-06 per year to 1.05E-06 per year, indicating that the proposed activity remains within the established safety basis of the MODU and continues to satisfy the applicable risk acceptance criteria. In addition to the standard well-control barriers provided by the Stena DrillMAX, the Asopus-1 campaign will deploy the K-BOS E-SID as a pre-positioned subsea emergency shut-in device installed below the BOP stack.

The E-SID provides an independent wellhead shear-and-seal barrier, separate from the primary BOP control system. The project-specific probabilistic risk assessment indicates that the combined BOP and E-SID configuration reduces the estimated probability of an uncontrolled blowout to approximately  $2.08 \times 10^{-8}$  per well.

On this basis, a sustained uncontrolled subsea blowout is not considered the representative loss-of-containment scenario for the Asopus-1 campaign. The deployment of the E-SID provides material project-specific risk reduction and supports the demonstration that well-control risks have been reduced to ALARP. Contingency source-control arrangements will nevertheless be maintained for emergency preparedness, including BOP intervention, well capping, containment and relief-well planning.

Overall, the assessment confirms that the proposed Asopus-1 drilling campaign remains within the established safety basis of the Stena DrillMAX and satisfies the applicable risk acceptance criteria.

Compared with the conservative reference HPHT exploration campaign considered in the existing DrillMAX QRA, the Asopus-1 activity results in lower individual risk, lower group risk and lower Main Safety Function impairment frequencies.

Table 9-37: Sensitivity Analysis Comparison

| PARAMETER                                  | BASE CASE – HPHT EXPLORATION CAMPAIGN | PROPOSED EXPLORATION WELL           | COMMENTS                                                                                                                                                                                                |
|--------------------------------------------|---------------------------------------|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Number of wells considered                 | 4 HPHT exploration wells per year     | 1 exploration well per year         | Reduced exposure frequency due to a single well operation, contributing to lower individual and group risk.                                                                                             |
| Water depth                                | 500 - 2,000 m                         | 840 m                               | Asopus-1 is over 500m of water, which is considered deep water and aligns with the basis of the existing QRA. In shallower water, the consequences of subsea blowouts would be more severe.             |
| Blowout flow rate                          | Full flow rate of 260 kg/s            | Oil - 14 kg/sec;<br>Gas – 79 kg/sec | The new case predicts a lower potential for hydrocarbon inventory release than the full-flow rate used in the base case, resulting in reduced consequence severity.                                     |
| Total POB                                  | 180                                   | 60 with a possibility to reach 180  | Total group risk exposure will change with respect to occupancy.                                                                                                                                        |
| Individual Risk Per Annum (IRPA)           | 1.84E-04 per year                     | 4.50E-5 per year                    | Approximately 75% reduction in individual risk.                                                                                                                                                         |
| Potential Loss of Life (PLL)               | 5.26E-02 fatalities/year              | 5.93E-03 fatalities/year            | Approximately 89% lower than the reference-case PLL, based on the project-specific personnel and exposure assumptions used in the QRA. This is a sensitivity comparison and not a like-for-like result. |
| Frequency of loss of Temporary Refuge (TR) | 6.77E-06 per year                     | 1.05E-06 per year                   | Approximately 84% lower than the reference-case TR impairment frequency, reflecting the reduced campaign exposure and project-specific assessment assumptions.                                          |

**Note:** Helicopter transportation FAR has not been included as a comparative metric because the Asopus-1 and existing DrillMAX QRA values use different exposure-normalisation methods. The Asopus-1 value is calculated using actual flight-exposure hours, whereas the existing DrillMAX QRA normalised transportation risk across the total facility exposure period.

The comparison is intended to illustrate the sensitivity of the calculated results to differences in operational scope, campaign duration and assessment assumptions. It is not a like-for-like comparison between identical drilling campaigns. The project-specific POB, worker-group distribution and helicopter-exposure assumptions shall be verified against the final campaign manning, and logistics plans before operations commence, and the affected risk results reviewed if material differences are identified.

# 10 Assessment and Evaluation of environmental impacts

## 10.1 Assessment of potentially significant impacts from normal / routine project activities

The assessment and evaluation of the potentially significant impacts from the implementation of the proposed project were carried out based on the following steps:

- Step 1: Identification and evaluation of the Significant Environmental Parameters (SEPs) or Valued Receptors (VRs) of the natural and anthropogenic environment of the study area.
- Step 2: Assessment and evaluation of the Potential Significant Impacts from routine operations of the mobilisation, drilling, decommissioning/abandonment phases of the examined Project.

### 10.1.1 Impact assessment and evaluation methodology

The Project's potential significant impacts on the natural and anthropogenic environment of the study area are assessed and evaluated, including the use of natural resources, the emission of pollutants, the creation of nuisances, and the disposal of generated waste. The impacts being examined concern all the abiotic and biotic parameters that shape the natural environment (atmosphere, soil, water, flora, fauna, noise, traffic, landscape, etc.), as well as land use and socio-economic characteristics of the study area.

The assessment and evaluation of E&S impacts mainly focus on the characteristics of potentially significant impacts (likelihood of occurrence, extent, intensity, cumulative/synergistic action, etc.) of all activities and individual elements of the project, based on the project design data, supporting studies, the existing environmental conditions and the results of the computational models (atmosphere, noise, etc.) used to simulate the potential impacts on various Environmental Parameters.

Within the framework of the present assessment, the following potential impacts are evaluated:

- Impacts during the Project lifetime, including the preparatory/mobilisation, operation, and demobilisation / decommissioning phases of the Project under study (routine project activities),
- Project's resilience to climate change, that is, its ability to cope with and adapt to the expected climate risks, according to the National Climate Law (Law No. 4936, GG 105/A/27.5.2022)
- Impacts deriving from the vulnerability of the Project to the risks of serious accidents or disasters related to the Project (non-routine operation), according to JMD 1915/2018, are evaluated in Section **Error! Reference source not found.**

#### 10.1.1.1 Recognition and evaluation of significant environmental aspects

The process of **Environmental and Social Impact Assessment (ESIA)** initially requires the distinction of parameters of the natural and anthropogenic environment receiving the impacts, into significant or

noteworthy elements defined as Significant Environmental Parameters (SEPs) or **Valued Receptors-VRs**. As a VR, any element of the natural and anthropogenic environment is characterized as significant by the parties involved in the evaluation, licensing, and implementation process of the project under study (project proponent, competent authorities and services, consultants, other parties directly or indirectly involved or affected by the implementation of the project, etc.).

VRs are categorized considering their environmental value, as derived from the data presented in Chapter 8 of the Current State of the Environment and - where possible - their sensitivity to the Project's activities.

Based on the above, VRs are categorized as **Low, Medium, and High Importance**. The significance of each VR is considered as weight in the final assessment of impacts during the ESIA process, as described in Section 10.1.1.3.2. In this way, the same impact is ultimately assessed as more significant in a High Importance Environmental Parameter compared to a Low Importance Environmental Parameter.

In the next stage of the ESIA process, the significance of each VR is correlated with the inherent significance of the corresponding potential impacts on it, leading to the comprehensive final assessment and evaluation of the expected environmental and social impacts. Based on the assessment of the current environmental conditions of the study area (see Chapter 8), the identified VRs and their corresponding assessment are presented in the following Table.

**Table 10-1: Identification and Assessment of Key Valued Receptors in the Study Area**

| VALUED RECEPTOR (VR)                                          |                                      | VR SIGNIFICANCE | JUSTIFICATION                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------------------------------------------|--------------------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Climatic and Bioclimatic Characteristics</b>               | Climate, microclimate and bioclimate | Medium          | Climate and weather conditions are important operational receptors that influence drilling safety, vessel movements, helicopter operations, and emergency response planning. However, the temporary offshore drilling campaign is not expected to cause measurable changes to regional climate, microclimate, or bioclimatic conditions.                                                                   |
|                                                               | Climate change                       | High            | Climate change is a highly important environmental receptor due to the contribution of greenhouse gas emissions from MODU, support vessels, and helicopter operations. Although emissions from the Project are temporary and limited in duration, they contribute cumulatively to a global environmental issue of international significance and are therefore considered a very high-importance receptor. |
| <b>Morphological and Topological Characteristics</b>          | Morphology                           | Medium          | Seabed morphology is an important receptor because drilling activities involve direct interaction with the seabed at the well location. However, effects are expected to be highly localized and temporary, with no dredging, reclamation, anchoring system, or permanent alteration of seabed or coastal morphology.                                                                                      |
|                                                               | Landscape                            | Low             | The well location is approximately 44 km offshore and no permanent offshore or onshore structures will be installed. Visual effects associated with the MODU, support vessels, and helicopter movements will be temporary and largely confined to distant offshore views, resulting in limited interaction with landscape receptors.                                                                       |
| <b>Geological, Tectonic and Soil / Seabed Characteristics</b> | Geology and slope stability          | Medium          | The Project involves drilling through geological formations and therefore interacts directly with the subsurface environment; however, effects are highly localized to the well and no significant alteration of regional geological conditions is expected.                                                                                                                                               |
|                                                               | Tectonics and Seismicity             | Medium          | The Project is located within a seismically active region of the eastern Mediterranean, making seismicity an important design and safety consideration, although                                                                                                                                                                                                                                           |

| VALUED RECEPTOR (VR)      |                                                          | VR SIGNIFICANCE | JUSTIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------|----------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                           |                                                          |                 | drilling activities are not expected to induce significant seismic events.                                                                                                                                                                                                                                                                                                                                                                                                    |
|                           | Soil                                                     | Low             | No terrestrial land take, excavation, or soil disturbance is required, as the Project is entirely offshore and supported by existing infrastructure.                                                                                                                                                                                                                                                                                                                          |
|                           | Seabed                                                   | Medium          | Installation and operation of the well, discharge of permitted drilling-related materials, and presence of the BOP and riser system interact directly with the seabed environment, although effects are expected to be localized and temporary.                                                                                                                                                                                                                               |
| Terrestrial Habitats      | Terrestrial habitats – vegetation                        | Low             | No vegetation clearance, land take, or terrestrial habitat disturbance is required.                                                                                                                                                                                                                                                                                                                                                                                           |
|                           | Terrestrial fauna (excluding avifauna)                   | Low             | No direct interaction with terrestrial fauna is expected due to the absence of new onshore infrastructure.                                                                                                                                                                                                                                                                                                                                                                    |
| Marine Habitats           | Marine habitats – underwater vegetation and flora        | Medium          | Marine habitats constitute a sensitive receptor because drilling activities occur within the marine environment and may result in localized seabed disturbance and temporary changes in water quality.                                                                                                                                                                                                                                                                        |
|                           | Marine fauna                                             | High            | Marine mammals, sea turtles, fish, and other marine species are among the most sensitive receptors potentially interacting with vessel traffic, underwater noise, lighting, and accidental events.                                                                                                                                                                                                                                                                            |
| Avifauna                  | Avifauna                                                 | Medium          | Offshore and migratory bird species may interact with vessel and MODU lighting and helicopter operations; however, effects are expected to be temporary and localized.                                                                                                                                                                                                                                                                                                        |
| Protected Areas           | Protected Areas                                          | High            | The wider study area includes international, European, and national designated sites and protected species, making protected areas a highly sensitive receptor despite the offshore location of the well.                                                                                                                                                                                                                                                                     |
|                           | Forests and wooded areas                                 | Low             | No interaction with forested or wooded environments is anticipated.                                                                                                                                                                                                                                                                                                                                                                                                           |
|                           | Other important natural areas                            | High            | Ecologically important marine and coastal areas occur within the wider region and may support protected species and habitats.                                                                                                                                                                                                                                                                                                                                                 |
| Anthropogenic Environment | Spatial Planning and Land Use                            | Medium          | Block 2 contains no permanent settlements or terrestrial land use, while onshore activities are confined to existing operational facilities at the Port of Igoumenitsa and Corfu International Airport, with no land take or change in land use. However, the Project directly relates to the Regional Spatial Framework for the Ionian Islands, which identifies offshore hydrocarbon exploration as an activity of national importance subject to environmental safeguards. |
|                           | Maritime uses                                            | High            | The wider study area supports intensive maritime uses including commercial shipping, fisheries, submarine cables, aquaculture, tourism and recreational navigation. Shipping and commercial fisheries have the greatest spatial interaction with the Project through the temporary safety exclusion zone and support-vessel movements, making maritime uses a highly important receptor.                                                                                      |
|                           | Structure and Functions of the Anthropogenic Environment | Low             | Project activities are limited to existing port and airport facilities and require no new infrastructure, land take or permanent occupation. Consequently, no fragmentation of settlement structure, urban fabric or existing land use functions is anticipated.                                                                                                                                                                                                              |
|                           | Cultural Heritage                                        | High            | The Project area lies within a region of recognised maritime archaeological importance, and marine surveys have identified a target interpreted as a possible ancient shipwreck (Target T057) within the survey area. Although terrestrial heritage assets lie outside the Project footprint, the potential presence of an underwater cultural heritage asset makes this a highly sensitive receptor requiring avoidance and protection measures.                             |



| VALUED RECEPTOR (VR)                                           |                                                                                        | VR SIGNIFICANCE | JUSTIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------------------------------------|----------------------------------------------------------------------------------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Socio-economic environment                                     | Economic Activities                                                                    | High            | The Project interacts with regional economic activities, particularly commercial fisheries, tourism, port services, logistics and local supply chains. The Project also has the potential to contribute positively to the Greek economy through investment, employment, procurement and demand for local and regional goods and services.                                                                                                                                                                                                                                       |
|                                                                | Community H&S                                                                          | High            | Community health and safety is a highly important receptor given the presence of established communities and active transport infrastructure, including the existing airport, port and marine traffic. The Project will interact with these existing transport activities through port logistics, helicopter operations and offshore MODU and support-vessel movements. However, the offshore well site is approximately 44 km from the nearest communities, limiting the potential for direct interaction with the wider community.                                            |
| Social Infrastructure                                          | Social Infrastructure                                                                  | Low             | The Project will use existing health and emergency services only incidentally and does not require new or expanded social infrastructure. Demand on existing service capacity is expected to be negligible.                                                                                                                                                                                                                                                                                                                                                                     |
| Technical Infrastructure                                       | Maritime Infrastructure                                                                | High            | The Project area lies within active offshore navigation routes in the Ionian Sea. Temporary establishment of a 500 m safety zone around the MODU and increased vessel traffic (PSVs) introduce potential interaction with commercial shipping lanes. However, impacts are temporary, locally confined, and managed through maritime safety procedures (NAVTEX, Notices to Mariners, and support vessel support, where available).                                                                                                                                               |
|                                                                | Other transport infrastructures (road, port, airport, logistics corridors)             | Medium          | The Project utilises existing onshore infrastructure including Igoumenitsa Port and Corfu International Airport without requiring new construction or capacity expansion. Interactions are operational and temporary, associated with crew transfers, supply logistics, and mobilisation/demobilisation activities.                                                                                                                                                                                                                                                             |
|                                                                | Energy and telecommunications infrastructure                                           | Low             | The Project utilises existing onshore energy and telecommunications infrastructure, without requiring capacity expansion.                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                                                | Environmental infrastructure (waste, wastewater, spill response, reception facilities) | Medium          | The Project will not rely on municipal or port-operated waste and wastewater management services for treatment or disposal. Instead, waste requiring transport ashore will be transported directly via the shore base to authorised regional facilities in accordance with the Project Waste Management Plan and applicable national legislation. Wastewater generated onboard the MODU and Project vessels will be managed by the relevant operator in accordance with applicable maritime requirements, vessel-specific systems and the Project's environmental requirements. |
| Atmospheric Environment                                        | Air quality                                                                            | Medium          | Emissions from the MODU, support vessels, and helicopters will occur throughout the drilling campaign and represent one of the principal operational environmental interactions, although effects are expected to be temporary and dispersed offshore.                                                                                                                                                                                                                                                                                                                          |
| Acoustic Environment and Emissions of Vibrations and Radiation | Airborne noise                                                                         | Medium          | Noise will be generated by drilling operations, vessels, and helicopters, but impacts will be temporary and largely confined to offshore workers and passing marine users.                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                                | Underwater noise                                                                       | High            | Underwater noise is a key receptor due to the presence of marine mammals, sea turtles, fish, and other sensitive marine fauna within the wider Ionian Sea environment.                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                                                | Vibrations                                                                             | Low             | Drilling-related vibration effects are expected to remain localized to the immediate vicinity of the well and are not anticipated to affect wider environmental receptors.                                                                                                                                                                                                                                                                                                                                                                                                      |

| VALUED RECEPTOR (VR) |                           | VR SIGNIFICANCE | JUSTIFICATION                                                                                                                                                                           |
|----------------------|---------------------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                      | Electromagnetic radiation | Low             | The Project does not involve significant sources of electromagnetic emissions beyond standard offshore communications and operational equipment.                                        |
| Waters               | Seawater                  | High            | Seawater is a primary receptor due to the offshore nature of the Project and the potential for operational discharges, accidental releases, and interactions with marine water quality. |
|                      | Surface waters            | Low             | No direct interaction with inland surface waters is anticipated as no new onshore infrastructure or freshwater abstractions are required.                                               |
|                      | Groundwater               | Low             | The offshore location and absence of onshore construction activities mean that groundwater resources will not be directly affected.                                                     |

### 10.1.1.2 Environmental and social scoping

A preliminary scoping exercise has been undertaken for the routine activities associated with the Project in order to identify the environmental and social receptors that may potentially be affected and to focus the assessment on those interactions that are considered relevant. The scoping process provides the basis for defining the scope and level of detail of the Environmental and Social Impact Assessment (ESIA) and ensures that the assessment is proportionate to the nature, scale and characteristics of the proposed activities.

The methodology applied comprised the following steps:

- Identification of Project activities: identification and breakdown of the distinct activities associated with each phase of the Project (mobilisation and preparation, drilling operations, and demobilization / abandonment) that could potentially result in interactions with the physical, biological or socio-economic environment;
- Identification of environmental and social receptors: identification of the environmental and social receptors (or Significant Environmental Parameters, SEPs) present within the Project area and wider area of influence (Section 10.1.1.1);
- Screening of potential interactions: systematic review of the potential interaction pathways between Project activities and identified receptors, taking into account the nature, extent, duration and reversibility of the activity, as well as the sensitivity of the receptor;
- Preparation of an interaction matrix: development of a scoping matrix listing Project activities against the potentially affected receptors, to identify and record potential interactions and determine whether these should be carried forward for further assessment.

The interaction matrix (Table 10-2) was used as a screening tool to distinguish between interactions that are unlikely to result in measurable environmental or social effects and those that warrant further consideration. Interactions identified as having the potential to give rise to adverse or beneficial effects warranting further assessment (i.e. those scoped in) have been carried forward to the detailed impact assessment presented in the following sections. Interactions considered unlikely to result in significant effects, due to the nature of the activity, the characteristics of the receiving environment, or the implementation of embedded mitigation measures incorporated into the Project design or required by applicable regulatory and operational controls, have been scoped out from further detailed assessment.

Table 10-2: Project activities – Interaction with Environmental and Social Parameters

| Project Phase / Activity / Element                                                                                                              | Significant Environmental Parameters (SEPs) |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                         |                                                                |                       |          |                 |                  |               |             |                |                  |            |                 |          |                |             |  |
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|                                                                                                                                                 | Climatic and Bioclimatic Characteristics    |                | Morphological and Topological Characteristics |           | Geological, Tectonic and Soil Characteristics |                 |               | Terrestrial Habitats |          | Marine Habitats      |                   |                    | Avifauna         | Protected Areas |          | Anthropogenic Environment |                 |             | Socio-economic environment** |                      | Social Infrastructure*** | Technical Infrastructure |                   | Atmospheric Environment | Acoustic Environment and Emissions of Vibrations and Radiation |                       |          | Water resources |                  |               |             |                |                  |            |                 |          |                |             |  |
|                                                                                                                                                 | Microclimate                                | Climate change | Morphology                                    | Landscape | Geology / Marine                              | Slope stability | Tectonics and | Soil                 | Seabed / | Terrestrial habitats | Terrestrial fauna | Benthic habitats / | Marine mammals / | Fish fauna      | Plankton | Avifauna                  | Protected Areas | Forests and | Other important              | Spatial Planning and | Maritime Uses            | Structure and            | Cultural Heritage | Economic activities     | Community H&S                                                  | Social Infrastructure | Maritime | Other transport | Energy, Telecoms | Environmental | Air quality | Airborne noise | Underwater noise | Vibrations | Electromagnetic | Seawater | Surface waters | Groundwater |  |
| Drilling Preparation and Mobilisation Phase                                                                                                     |                                             |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                         |                                                                |                       |          |                 |                  |               |             |                |                  |            |                 |          |                |             |  |
| Human, material and natural resources                                                                                                           |                                             |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                         |                                                                |                       |          |                 |                  |               |             |                |                  |            |                 |          |                |             |  |
| Mobilisation (recruitment, employment, involvement of labor force)                                                                              |                                             |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                         |                                                                |                       |          |                 |                  |               |             |                |                  |            |                 |          |                |             |  |
| Supply chain and procurement issues regarding the construction materials, resources and services required for the implementation of the project |                                             |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                         |                                                                |                       |          |                 |                  |               |             |                |                  |            |                 |          |                |             |  |
| Logistics base preparation                                                                                                                      |                                             |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                         |                                                                |                       |          |                 |                  |               |             |                |                  |            |                 |          |                |             |  |

| Project Phase / Activity / Element                                    | Significant Environmental Parameters (SEPs) |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                         |                                                                |                       |          |                 |                 |               |             |                |                  |            |                 |          |                |             |  |
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|                                                                       | Climatic and Bioclimatic Characteristics    |                | Morphological and Topological Characteristics |           | Geological, Tectonic and Soil Characteristics |                 |               | Terrestrial Habitats |          | Marine Habitats      |                   |                    | Avifauna         | Protected Areas |          | Anthropogenic Environment |                 |             | Socio-economic environment** |                      | Social Infrastructure*** | Technical Infrastructure |                   | Atmospheric Environment | Acoustic Environment and Emissions of Vibrations and Radiation |                       |          | Water resources |                 |               |             |                |                  |            |                 |          |                |             |  |
|                                                                       | Microclimate                                | Climate change | Morphology                                    | Landscape | Geology / Marine                              | Slope stability | Tectonics and | Soil                 | Seabed / | Terrestrial habitats | Terrestrial fauna | Benthic habitats / | Marine mammals / | Fish fauna      | Plankton | Avifauna                  | Protected Areas | Forests and | Other important              | Spatial Planning and | Maritime Uses            | Structure and            | Cultural Heritage | Economic activities     | Community H&S                                                  | Social Infrastructure | Maritime | Other transport | Energ. Telecoms | Environmental | Air quality | Airborne noise | Underwater noise | Vibrations | Electromagnetic | Seawater | Surface waters | Groundwater |  |
|                                                                       |                                             |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                         |                                                                |                       |          |                 |                 |               |             |                |                  |            |                 |          |                |             |  |
| Install temporary fencing around entire base perimeter                |                                             |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                         |                                                                |                       |          |                 |                 |               |             |                |                  |            |                 |          |                |             |  |
| Install signage and directional markings                              |                                             |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                         |                                                                |                       |          |                 |                 |               |             |                |                  |            |                 |          |                |             |  |
| Mobilise wharf crane to designated crane area                         |                                             |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                         |                                                                |                       |          |                 |                 |               |             |                |                  |            |                 |          |                |             |  |
| Install wharf crane (if applicable)                                   |                                             |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                         |                                                                |                       |          |                 |                 |               |             |                |                  |            |                 |          |                |             |  |
| Install utility connections                                           |                                             |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                         |                                                                |                       |          |                 |                 |               |             |                |                  |            |                 |          |                |             |  |
| Install prefabricated office units, welfare and sanitation facilities |                                             |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                         |                                                                |                       |          |                 |                 |               |             |                |                  |            |                 |          |                |             |  |
| Onshore loading/unloading or staging                                  |                                             |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                         |                                                                |                       |          |                 |                 |               |             |                |                  |            |                 |          |                |             |  |
| Helicopter base preparation                                           |                                             |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                         |                                                                |                       |          |                 |                 |               |             |                |                  |            |                 |          |                |             |  |

| Project Phase / Activity / Element                             | Significant Environmental Parameters (SEPs) |                |                                               |           |                                               |                 |               |      |                      |                      |                   |                    |                  |            |          |          |                 |             |                           |                      |               |                              |                   |                           |                          |                       |                         |                                                                |                  |               |                 |                |                  |            |                 |          |                |             |  |
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|                                                                | Climatic and Bioclimatic Characteristics    |                | Morphological and Topological Characteristics |           | Geological, Tectonic and Soil Characteristics |                 |               |      | Terrestrial Habitats |                      | Marine Habitats   |                    |                  |            | Avifauna |          | Protected Areas |             | Anthropogenic Environment |                      |               | Socio-economic environment** |                   | Social Infrastructure**** | Technical Infrastructure |                       | Atmospheric Environment | Acoustic Environment and Emissions of Vibrations and Radiation |                  |               | Water resources |                |                  |            |                 |          |                |             |  |
|                                                                | Microclimate                                | Climate change | Morphology                                    | Landscape | Geology / Marine                              | Slope stability | Tectonics and | Soil | Seabed /             | Terrestrial habitats | Terrestrial fauna | Benthic habitats / | Marine mammals / | Fish fauna | Plankton | Avifauna | Protected Areas | Forests and | Other important           | Spatial Planning and | Maritime Uses | Structure and                | Cultural Heritage | Economic activities       | Community H&S            | Social Infrastructure | Maritime                | Other transport                                                | Energ., Telecoms | Environmental | Air quality     | Airborne noise | Underwater noise | Vibrations | Electromagnetic | Seawater | Surface waters | Groundwater |  |
| Install temporary helicopter hangar at Corfu                   |                                             |                |                                               |           |                                               |                 |               |      |                      |                      |                   |                    |                  |            |          |          |                 |             |                           |                      |               |                              |                   |                           |                          |                       |                         |                                                                |                  |               |                 |                |                  |            |                 |          |                |             |  |
| Transit                                                        |                                             |                |                                               |           |                                               |                 |               |      |                      |                      |                   |                    |                  |            |          |          |                 |             |                           |                      |               |                              |                   |                           |                          |                       |                         |                                                                |                  |               |                 |                |                  |            |                 |          |                |             |  |
| Mobilisation of MODU to well site – power generation           |                                             |                |                                               |           |                                               |                 |               |      |                      |                      |                   |                    |                  |            |          |          |                 |             |                           |                      |               |                              |                   |                           |                          |                       |                         |                                                                |                  |               |                 |                |                  |            |                 |          |                |             |  |
| Exploration Drilling Operations Phase - Routine Activities     |                                             |                |                                               |           |                                               |                 |               |      |                      |                      |                   |                    |                  |            |          |          |                 |             |                           |                      |               |                              |                   |                           |                          |                       |                         |                                                                |                  |               |                 |                |                  |            |                 |          |                |             |  |
| MODU & Support vessel operation                                |                                             |                |                                               |           |                                               |                 |               |      |                      |                      |                   |                    |                  |            |          |          |                 |             |                           |                      |               |                              |                   |                           |                          |                       |                         |                                                                |                  |               |                 |                |                  |            |                 |          |                |             |  |
| MODU safety exclusion zone and support/supply vessel transfers |                                             |                |                                               |           |                                               |                 |               |      |                      |                      |                   |                    |                  |            |          |          |                 |             |                           |                      |               |                              |                   |                           |                          |                       |                         |                                                                |                  |               |                 |                |                  |            |                 |          |                |             |  |
| Drillship dynamic positioning (DP)                             |                                             |                |                                               |           |                                               |                 |               |      |                      |                      |                   |                    |                  |            |          |          |                 |             |                           |                      |               |                              |                   |                           |                          |                       |                         |                                                                |                  |               |                 |                |                  |            |                 |          |                |             |  |
| MODU drilling, wellhead and casing installation                |                                             |                |                                               |           |                                               |                 |               |      |                      |                      |                   |                    |                  |            |          |          |                 |             |                           |                      |               |                              |                   |                           |                          |                       |                         |                                                                |                  |               |                 |                |                  |            |                 |          |                |             |  |

| Project Phase / Activity / Element                                                  | Significant Environmental Parameters (SEPs) |                |                                               |           |                                               |                 |               |      |                      |                      |                   |                    |                  |            |                 |          |                           |             |                 |                              |               |                          |                          |                     |               |                         |                                                                |                 |                  |                 |             |                |                  |            |                 |          |                |             |  |
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|                                                                                     | Climatic and Bioclimatic Characteristics    |                | Morphological and Topological Characteristics |           | Geological, Tectonic and Soil Characteristics |                 |               |      | Terrestrial Habitats |                      | Marine Habitats   |                    |                  | Avifauna   | Protected Areas |          | Anthropogenic Environment |             |                 | Socio-economic environment** |               | Social Infrastructure*** | Technical Infrastructure |                     |               | Atmospheric Environment | Acoustic Environment and Emissions of Vibrations and Radiation |                 |                  | Water resources |             |                |                  |            |                 |          |                |             |  |
|                                                                                     | Microclimate                                | Climate change | Morphology                                    | Landscape | Geology / Marine                              | Slope stability | Tectonics and | Soil | Seabed /             | Terrestrial habitats | Terrestrial fauna | Benthic habitats / | Marine mammals / | Fish fauna | Plankton        | Avifauna | Protected Areas           | Forests and | Other important | Spatial Planning and         | Maritime Uses | Structure and            | Cultural Heritage        | Economic activities | Community H&S | Social Infrastructure   | Maritime                                                       | Other transport | Energy, Telecoms | Environmental   | Air quality | Airborne noise | Underwater noise | Vibrations | Electromagnetic | Seawater | Surface waters | Groundwater |  |
|                                                                                     |                                             |                |                                               |           |                                               |                 |               |      |                      |                      |                   |                    |                  |            |                 |          |                           |             |                 |                              |               |                          |                          |                     |               |                         |                                                                |                 |                  |                 |             |                |                  |            |                 |          |                |             |  |
| Discharge of water based fluids and cuttings to seabed (riserless drilling)         |                                             |                |                                               |           |                                               |                 |               |      |                      |                      |                   |                    |                  |            |                 |          |                           |             |                 |                              |               |                          |                          |                     |               |                         |                                                                |                 |                  |                 |             |                |                  |            |                 |          |                |             |  |
| Discharge of water based fluids and cuttings near sea surface (drilling with riser) |                                             |                |                                               |           |                                               |                 |               |      |                      |                      |                   |                    |                  |            |                 |          |                           |             |                 |                              |               |                          |                          |                     |               |                         |                                                                |                 |                  |                 |             |                |                  |            |                 |          |                |             |  |
| Cement discharges at sea bed                                                        |                                             |                |                                               |           |                                               |                 |               |      |                      |                      |                   |                    |                  |            |                 |          |                           |             |                 |                              |               |                          |                          |                     |               |                         |                                                                |                 |                  |                 |             |                |                  |            |                 |          |                |             |  |
| Cement discharges near sea surface from tank wash out                               |                                             |                |                                               |           |                                               |                 |               |      |                      |                      |                   |                    |                  |            |                 |          |                           |             |                 |                              |               |                          |                          |                     |               |                         |                                                                |                 |                  |                 |             |                |                  |            |                 |          |                |             |  |
| Pipe dope use during drilling                                                       |                                             |                |                                               |           |                                               |                 |               |      |                      |                      |                   |                    |                  |            |                 |          |                           |             |                 |                              |               |                          |                          |                     |               |                         |                                                                |                 |                  |                 |             |                |                  |            |                 |          |                |             |  |
| Testing of MODU blowout preventer (Discharges)                                      |                                             |                |                                               |           |                                               |                 |               |      |                      |                      |                   |                    |                  |            |                 |          |                           |             |                 |                              |               |                          |                          |                     |               |                         |                                                                |                 |                  |                 |             |                |                  |            |                 |          |                |             |  |

| Project Phase / Activity / Element                                                                                       | Significant Environmental Parameters (SEPs) |                |                                               |           |                                               |                 |               |      |                      |                      |                   |                    |                  |            |          |                 |                 |                           |                 |                      |                              |               |                          |                          |               |                       |                         |                                                                |                 |               |                 |                |                  |            |                 |          |                |             |  |
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|                                                                                                                          | Climatic and Bioclimatic Characteristics    |                | Morphological and Topological Characteristics |           | Geological, Tectonic and Soil Characteristics |                 |               |      | Terrestrial Habitats |                      | Marine Habitats   |                    |                  |            | Avifauna | Protected Areas |                 | Anthropogenic Environment |                 |                      | Socio-economic environment** |               | Social Infrastructure*** | Technical Infrastructure |               |                       | Atmospheric Environment | Acoustic Environment and Emissions of Vibrations and Radiation |                 |               | Water resources |                |                  |            |                 |          |                |             |  |
|                                                                                                                          | Microclimate                                | Climate change | Morphology                                    | Landscape | Geology / Marine                              | Slope stability | Tectonics and | Soil | Seabed /             | Terrestrial habitats | Terrestrial fauna | Benthic habitats / | Marine mammals / | Fish fauna | Plankton | Avifauna        | Protected Areas | Forests and               | Other important | Spatial Planning and | Maritime Uses                | Structure and | Cultural Heritage        | Economic activities      | Community H&S | Social Infrastructure | Maritime                | Other transport                                                | Energ. Telecoms | Environmental | Air quality     | Airborne noise | Underwater noise | Vibrations | Electromagnetic | Seawater | Surface waters | Groundwater |  |
|                                                                                                                          |                                             |                |                                               |           |                                               |                 |               |      |                      |                      |                   |                    |                  |            |          |                 |                 |                           |                 |                      |                              |               |                          |                          |               |                       |                         |                                                                |                 |               |                 |                |                  |            |                 |          |                |             |  |
| Discharge of sanitary waste from MODU and support/supply vessels                                                         |                                             |                |                                               |           |                                               |                 |               |      |                      |                      |                   |                    |                  |            |          |                 |                 |                           |                 |                      |                              |               |                          |                          |               |                       |                         |                                                                |                 |               |                 |                |                  |            |                 |          |                |             |  |
| Discharge of food waste from MODU and support/supply vessels                                                             |                                             |                |                                               |           |                                               |                 |               |      |                      |                      |                   |                    |                  |            |          |                 |                 |                           |                 |                      |                              |               |                          |                          |               |                       |                         |                                                                |                 |               |                 |                |                  |            |                 |          |                |             |  |
| Desalination unit discharges from MODU                                                                                   |                                             |                |                                               |           |                                               |                 |               |      |                      |                      |                   |                    |                  |            |          |                 |                 |                           |                 |                      |                              |               |                          |                          |               |                       |                         |                                                                |                 |               |                 |                |                  |            |                 |          |                |             |  |
| Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels |                                             |                |                                               |           |                                               |                 |               |      |                      |                      |                   |                    |                  |            |          |                 |                 |                           |                 |                      |                              |               |                          |                          |               |                       |                         |                                                                |                 |               |                 |                |                  |            |                 |          |                |             |  |
| Uplift and discharge of cooling water from MODU                                                                          |                                             |                |                                               |           |                                               |                 |               |      |                      |                      |                   |                    |                  |            |          |                 |                 |                           |                 |                      |                              |               |                          |                          |               |                       |                         |                                                                |                 |               |                 |                |                  |            |                 |          |                |             |  |



| Project Phase / Activity / Element                | Significant Environmental Parameters (SEPs)               |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                     |                         |                                                                |          |                 |                  |               |             |                |                  |            |                 |          |                |             |  |  |
|---------------------------------------------------|-----------------------------------------------------------|----------------|-----------------------------------------------|-----------|-----------------------------------------------|-----------------|---------------|----------------------|----------|----------------------|-------------------|--------------------|------------------|-----------------|----------|---------------------------|-----------------|-------------|------------------------------|----------------------|--------------------------|--------------------------|-------------------|---------------------|-------------------------|----------------------------------------------------------------|----------|-----------------|------------------|---------------|-------------|----------------|------------------|------------|-----------------|----------|----------------|-------------|--|--|
|                                                   | Climatic and Bioclimatic Characteristics                  |                | Morphological and Topological Characteristics |           | Geological, Tectonic and Soil Characteristics |                 |               | Terrestrial Habitats |          | Marine Habitats      |                   |                    | Avifauna         | Protected Areas |          | Anthropogenic Environment |                 |             | Socio-economic environment** |                      | Social Infrastructure*** | Technical Infrastructure |                   |                     | Atmospheric Environment | Acoustic Environment and Emissions of Vibrations and Radiation |          |                 | Water resources  |               |             |                |                  |            |                 |          |                |             |  |  |
|                                                   | Microclimate                                              | Climate change | Morphology                                    | Landscape | Geology / Marine                              | Slope stability | Tectonics and | Soil                 | Seabed / | Terrestrial habitats | Terrestrial fauna | Benthic habitats / | Marine mammals / | Fish fauna      | Plankton | Avifauna                  | Protected Areas | Forests and | Other important              | Spatial Planning and | Maritime Uses            | Structure and            | Cultural Heritage | Economic activities | Community H&S           | Social Infrastructure                                          | Maritime | Other transport | Energv. Telecoms | Environmental | Air quality | Airborne noise | Underwater noise | Vibrations | Electromagnetic | Seawater | Surface waters | Groundwater |  |  |
|                                                   |                                                           |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                     |                         |                                                                |          |                 |                  |               |             |                |                  |            |                 |          |                |             |  |  |
|                                                   | Discharge of ballast from MODU and support/supply vessels |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                     |                         |                                                                |          |                 |                  |               |             |                |                  |            |                 |          |                |             |  |  |
|                                                   | MODU and support/supply vessel power generation           |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                     |                         |                                                                |          |                 |                  |               |             |                |                  |            |                 |          |                |             |  |  |
|                                                   | Vertical seismic profile (VSP) activities                 |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                     |                         |                                                                |          |                 |                  |               |             |                |                  |            |                 |          |                |             |  |  |
|                                                   | Support activities (movement of support vessels)          |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                     |                         |                                                                |          |                 |                  |               |             |                |                  |            |                 |          |                |             |  |  |
|                                                   | Lighting from MODU                                        |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                     |                         |                                                                |          |                 |                  |               |             |                |                  |            |                 |          |                |             |  |  |
|                                                   | Chemical use and storage                                  |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                     |                         |                                                                |          |                 |                  |               |             |                |                  |            |                 |          |                |             |  |  |
| Radioactive source use and storage (well logging) |                                                           |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                     |                         |                                                                |          |                 |                  |               |             |                |                  |            |                 |          |                |             |  |  |
| ROV Operation                                     |                                                           |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                     |                         |                                                                |          |                 |                  |               |             |                |                  |            |                 |          |                |             |  |  |
| Contingency Activities                            |                                                           |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                     |                         |                                                                |          |                 |                  |               |             |                |                  |            |                 |          |                |             |  |  |

| Project Phase / Activity / Element                                                                                                                                                                    | Significant Environmental Parameters (SEPs) |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                           |                          |                   |                         |                                                                |                       |          |                 |                  |               |             |                |                  |            |                 |          |                |             |  |
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|                                                                                                                                                                                                       | Climatic and Bioclimatic Characteristics    |                | Morphological and Topological Characteristics |           | Geological, Tectonic and Soil Characteristics |                 |               | Terrestrial Habitats |          | Marine Habitats      |                   |                    | Avifauna         | Protected Areas |          | Anthropogenic Environment |                 |             | Socio-economic environment** |                      | Social Infrastructure**** | Technical Infrastructure |                   | Atmospheric Environment | Acoustic Environment and Emissions of Vibrations and Radiation |                       |          | Water resources |                  |               |             |                |                  |            |                 |          |                |             |  |
|                                                                                                                                                                                                       | Microclimate                                | Climate change | Morphology                                    | Landscape | Geology / Marine                              | Slope stability | Tectonics and | Soil                 | Seabed / | Terrestrial habitats | Terrestrial fauna | Benthic habitats / | Marine mammals / | Fish fauna      | Plankton | Avifauna                  | Protected Areas | Forests and | Other important              | Spatial Planning and | Maritime Uses             | Structure and            | Cultural Heritage | Economic activities     | Community H&S                                                  | Social Infrastructure | Maritime | Other transport | Energv. Telecoms | Environmental | Air quality | Airborne noise | Underwater noise | Vibrations | Electromagnetic | Seawater | Surface waters | Groundwater |  |
|                                                                                                                                                                                                       |                                             |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                           |                          |                   |                         |                                                                |                       |          |                 |                  |               |             |                |                  |            |                 |          |                |             |  |
| Drilling contingency activities (including re-spudding, sidetracking, temporary well suspension, emergency disconnect, lost-circulation response, contingent cementing and mechanical pipe severance) |                                             |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                           |                          |                   |                         |                                                                |                       |          |                 |                  |               |             |                |                  |            |                 |          |                |             |  |
| Logistics base operation                                                                                                                                                                              |                                             |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                           |                          |                   |                         |                                                                |                       |          |                 |                  |               |             |                |                  |            |                 |          |                |             |  |
| Operation of facilities, equipment and vehicles                                                                                                                                                       |                                             |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                           |                          |                   |                         |                                                                |                       |          |                 |                  |               |             |                |                  |            |                 |          |                |             |  |
| Logistics base chemicals management                                                                                                                                                                   |                                             |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                           |                          |                   |                         |                                                                |                       |          |                 |                  |               |             |                |                  |            |                 |          |                |             |  |
| Logistics base waste management (including HW)                                                                                                                                                        |                                             |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                           |                          |                   |                         |                                                                |                       |          |                 |                  |               |             |                |                  |            |                 |          |                |             |  |

| Project Phase / Activity / Element                          | Significant Environmental Parameters (SEPs) |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                     |                         |                                                                |          |                 |                 |               |             |                |                  |            |                 |          |                |             |  |
|-------------------------------------------------------------|---------------------------------------------|----------------|-----------------------------------------------|-----------|-----------------------------------------------|-----------------|---------------|----------------------|----------|----------------------|-------------------|--------------------|------------------|-----------------|----------|---------------------------|-----------------|-------------|------------------------------|----------------------|--------------------------|--------------------------|-------------------|---------------------|-------------------------|----------------------------------------------------------------|----------|-----------------|-----------------|---------------|-------------|----------------|------------------|------------|-----------------|----------|----------------|-------------|--|
|                                                             | Climatic and Bioclimatic Characteristics    |                | Morphological and Topological Characteristics |           | Geological, Tectonic and Soil Characteristics |                 |               | Terrestrial Habitats |          | Marine Habitats      |                   |                    | Avifauna         | Protected Areas |          | Anthropogenic Environment |                 |             | Socio-economic environment** |                      | Social Infrastructure*** | Technical Infrastructure |                   |                     | Atmospheric Environment | Acoustic Environment and Emissions of Vibrations and Radiation |          |                 | Water resources |               |             |                |                  |            |                 |          |                |             |  |
|                                                             | Microclimate                                | Climate change | Morphology                                    | Landscape | Geology / Marine                              | Slope stability | Tectonics and | Soil                 | Seabed / | Terrestrial habitats | Terrestrial fauna | Benthic habitats / | Marine mammals / | Fish fauna      | Plankton | Avifauna                  | Protected Areas | Forests and | Other important              | Spatial Planning and | Maritime Uses            | Structure and            | Cultural Heritage | Economic activities | Community H&S           | Social Infrastructure                                          | Maritime | Other transport | Energ. Telecoms | Environmental | Air quality | Airborne noise | Underwater noise | Vibrations | Electromagnetic | Seawater | Surface waters | Groundwater |  |
| Logistics base operation - disruption to port activities    |                                             |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                     |                         |                                                                |          |                 |                 |               |             |                |                  |            |                 |          |                |             |  |
| Onshore storage and transport of radioactive sealed sources |                                             |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                     |                         |                                                                |          |                 |                 |               |             |                |                  |            |                 |          |                |             |  |
| Logistics base drainage (discharge of rainwater run-off)    |                                             |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                     |                         |                                                                |          |                 |                 |               |             |                |                  |            |                 |          |                |             |  |
| Helicopter base operation                                   |                                             |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                     |                         |                                                                |          |                 |                 |               |             |                |                  |            |                 |          |                |             |  |
| Helicopter transfers between heliport and MODU              |                                             |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                     |                         |                                                                |          |                 |                 |               |             |                |                  |            |                 |          |                |             |  |
| Abandonment - Demobilisation                                |                                             |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                     |                         |                                                                |          |                 |                 |               |             |                |                  |            |                 |          |                |             |  |
| Well plug and abandonment                                   |                                             |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                     |                         |                                                                |          |                 |                 |               |             |                |                  |            |                 |          |                |             |  |
| Cement plug installation and abandonment                    |                                             |                |                                               |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                      |                          |                          |                   |                     |                         |                                                                |          |                 |                 |               |             |                |                  |            |                 |          |                |             |  |

| Project Phase / Activity / Element               | Significant Environmental Parameters (SEPs) |                |                                               |           |                                               |                 |               |      |                      |                      |                   |                    |                  |            |          |                 |                 |             |                           |                      |               |                              |                   |                           |                          |                       |          |                         |                                                                |               |             |                 |                  |            |                 |          |                |             |
|--------------------------------------------------|---------------------------------------------|----------------|-----------------------------------------------|-----------|-----------------------------------------------|-----------------|---------------|------|----------------------|----------------------|-------------------|--------------------|------------------|------------|----------|-----------------|-----------------|-------------|---------------------------|----------------------|---------------|------------------------------|-------------------|---------------------------|--------------------------|-----------------------|----------|-------------------------|----------------------------------------------------------------|---------------|-------------|-----------------|------------------|------------|-----------------|----------|----------------|-------------|
|                                                  | Climatic and Bioclimatic Characteristics    |                | Morphological and Topological Characteristics |           | Geological, Tectonic and Soil Characteristics |                 |               |      | Terrestrial Habitats |                      | Marine Habitats   |                    |                  |            | Avifauna | Protected Areas |                 |             | Anthropogenic Environment |                      |               | Socio-economic environment** |                   | Social Infrastructure**** | Technical Infrastructure |                       |          | Atmospheric Environment | Acoustic Environment and Emissions of Vibrations and Radiation |               |             | Water resources |                  |            |                 |          |                |             |
|                                                  | Microclimate                                | Climate change | Morphology                                    | Landscape | Geology / Marine                              | Slope stability | Tectonics and | Soil | Seabed /             | Terrestrial habitats | Terrestrial fauna | Benthic habitats / | Marine mammals / | Fish fauna | Plankton | Avifauna        | Protected Areas | Forests and | Other important           | Spatial Planning and | Maritime Uses | Structure and                | Cultural Heritage | Economic activities       | Community H&S            | Social Infrastructure | Maritime | Other transport         | Energy, Telecoms                                               | Environmental | Air quality | Airborne noise  | Underwater noise | Vibrations | Electromagnetic | Seawater | Surface waters | Groundwater |
| MODU circulation and surface handling operations |                                             |                |                                               |           |                                               |                 |               |      |                      |                      |                   |                    |                  |            |          |                 |                 |             |                           |                      |               |                              |                   |                           |                          |                       |          |                         |                                                                |               |             |                 |                  |            |                 |          |                |             |
| Removal of temporary subsea infrastructure       |                                             |                |                                               |           |                                               |                 |               |      |                      |                      |                   |                    |                  |            |          |                 |                 |             |                           |                      |               |                              |                   |                           |                          |                       |          |                         |                                                                |               |             |                 |                  |            |                 |          |                |             |
| ROV post operation seabed survey                 |                                             |                |                                               |           |                                               |                 |               |      |                      |                      |                   |                    |                  |            |          |                 |                 |             |                           |                      |               |                              |                   |                           |                          |                       |          |                         |                                                                |               |             |                 |                  |            |                 |          |                |             |
| Logistics base demobilisation                    |                                             |                |                                               |           |                                               |                 |               |      |                      |                      |                   |                    |                  |            |          |                 |                 |             |                           |                      |               |                              |                   |                           |                          |                       |          |                         |                                                                |               |             |                 |                  |            |                 |          |                |             |
| Dismantling and removal from the port area       |                                             |                |                                               |           |                                               |                 |               |      |                      |                      |                   |                    |                  |            |          |                 |                 |             |                           |                      |               |                              |                   |                           |                          |                       |          |                         |                                                                |               |             |                 |                  |            |                 |          |                |             |
| Waste contractor collections (all wastes)        |                                             |                |                                               |           |                                               |                 |               |      |                      |                      |                   |                    |                  |            |          |                 |                 |             |                           |                      |               |                              |                   |                           |                          |                       |          |                         |                                                                |               |             |                 |                  |            |                 |          |                |             |
| Removal of helicopter hangar                     |                                             |                |                                               |           |                                               |                 |               |      |                      |                      |                   |                    |                  |            |          |                 |                 |             |                           |                      |               |                              |                   |                           |                          |                       |          |                         |                                                                |               |             |                 |                  |            |                 |          |                |             |

| Project Phase / Activity / Element | Significant Environmental Parameters (SEPs) |                                               |            |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              |                          |
|------------------------------------|---------------------------------------------|-----------------------------------------------|------------|-----------|-----------------------------------------------|-----------------|---------------|----------------------|----------|----------------------|-------------------|--------------------|------------------|-----------------|----------|---------------------------|-----------------|-------------|------------------------------|--------------------------|
|                                    | Climatic and Bioclimatic Characteristics    | Morphological and Topological Characteristics |            |           | Geological, Tectonic and Soil Characteristics |                 |               | Terrestrial Habitats |          | Marine Habitats      |                   |                    | Avifauna         | Protected Areas |          | Anthropogenic Environment |                 |             | Socio-economic environment** | Social Infrastructure*** |
|                                    | Microclimate                                | Climate change                                | Morphology | Landscape | Geology / Marine                              | Slope stability | Tectonics and | Soil                 | Seabed / | Terrestrial habitats | Terrestrial fauna | Benthic habitats / | Marine mammals / | Fish fauna      | Plankton | Avifauna                  | Protected Areas | Forests and | Other important              | Spatial Planning and     |
|                                    |                                             |                                               |            |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              | Maritime Uses            |
|                                    |                                             |                                               |            |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              | Structure and            |
|                                    |                                             |                                               |            |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              | Cultural Heritage        |
|                                    |                                             |                                               |            |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              | Economic activities      |
|                                    |                                             |                                               |            |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              | Community H&S            |
|                                    |                                             |                                               |            |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              | Social Infrastructure    |
|                                    |                                             |                                               |            |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              | Maritime                 |
|                                    |                                             |                                               |            |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              | Other transport          |
|                                    |                                             |                                               |            |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              | Energy, Telecoms         |
|                                    |                                             |                                               |            |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              | Environmental            |
|                                    |                                             |                                               |            |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              | Air quality              |
|                                    |                                             |                                               |            |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              | Airborne noise           |
|                                    |                                             |                                               |            |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              | Underwater noise         |
|                                    |                                             |                                               |            |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              | Vibrations               |
|                                    |                                             |                                               |            |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              | Electromagnetic          |
|                                    |                                             |                                               |            |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              | Seawater                 |
|                                    |                                             |                                               |            |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              | Surface waters           |
|                                    |                                             |                                               |            |           |                                               |                 |               |                      |          |                      |                   |                    |                  |                 |          |                           |                 |             |                              | Groundwater              |

## LEGEND

No interaction

Negligible interaction

Negative interaction

Positive interaction

Mixed interaction

### 10.1.1.3 Assessment of Environmental and Social Impacts

The final assessment of each potential impact results from the interaction between the nature of each impact (type, significance, and magnitude) and the importance of the respective Valued Receptor (Table 10-1). Consequently, the overall identification and evaluation of each potential impact depend on the intrinsic significance of the impact, the sensitivity, and the quality of the environment, as described in the following Sections.

#### 10.1.1.3.1 Calculation of the significance of impacts

The calculation of the significance of each impact is based on the Conesa method (Conesa, 2010), which was refined and adapted by the LDK study team so as, on the one hand, to align with international guidelines, the corresponding national and EU legislation, as well as internationally recognized best available practices, and on the other hand, to ensure the appropriate level of functionality in accordance with the technical parameters of the project under assessment and the environmental characteristics of the study area.

According to this method, the assessment of the significance of a project's or activity's impact on an environmental parameter results from evaluating the probability of occurrence of the project's/activity's effect, in conjunction with specific variables, including, among others, the intensity of the intervention, the extent, and the duration of the resulting effect.

The significance of impacts is assessed based on the qualitative outcome caused by each effect, which in turn is defined as the ratio by which the environmental impact is measured according to the degree of intensity of the generated change and the classification of the effect. This classification is based on qualitative criteria such as intensity (IN), extent (EX), moment of occurrence (MO), duration (PE), reversibility (RV), synergy (SI), accumulation (AC), type of effect (EF), periodicity (PR), and mitigation (MC).

Within the context of this Chapter, the probability of occurrence is not included among the qualitative criteria for determining the significance of the impact, as the activities and associated impact pathways assessed under routine operations are assumed to occur, where relevant, for the purposes of the assessment. Impacts with a lower probability of occurrence concern emergency events / accidents, which are assessed using a different methodology based on the probability of occurrence of the potential hazards and their consequences (see Chapter 9).

The qualitative evaluation criteria for calculating the significance of each impact are presented in the following Table.

**Table 10-3: Qualitative Assessment Criteria for the Environmental and Social Impacts of the Project**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Nature:</b> Defines the nature of the impact, which may be Positive or Negative.</p> <p><b>Positive:</b> An impact considered to represent an improvement to the baseline or introduces a positive change.</p> <p><b>Negative:</b> An impact considered to represent a deterioration from the baseline or introduces an undesirable factor.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <p><b>Intensity (IN):</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <p><b>Natural Environment (Biotic and Abiotic):</b> Intensity may be assessed in relation to the degree of change caused to the receptor (e.g. habitats, species or biocommunities, waters, soil, etc.). Receptor sensitivity and importance are considered separately in the final impact significance assessment. In detail:</p> <p><b>Negligible:</b> The impact on the environment is not detectable.</p> <p><b>Minor:</b></p> <ul style="list-style-type: none"> <li>The impact affects the environment in such a way that natural functions and processes are not significantly adversely affected (in case of a negative impact).</li> <li>The impact affects the environment in such a way that natural functions improve to a minor degree (in case of a positive impact).</li> </ul> <p><b>Moderate:</b></p> <ul style="list-style-type: none"> <li>When the affected receptor is altered, natural functions and processes continue, albeit in a modified form (in case of a negative impact).</li> <li>When the affected receptor is altered, yet natural functions and processes are significantly improved (in case of a positive impact).</li> </ul> <p><b>High:</b></p> <ul style="list-style-type: none"> <li>When natural functions or receptors are altered to such an extent that they may cease or become temporarily or permanently degraded (in case of a negative impact).</li> <li>When natural functions or receptors are significantly upgraded in relation to their existing condition (in case of a positive impact).</li> </ul> <p><b>Critical:</b></p> <ul style="list-style-type: none"> <li>When natural functions or receptors are altered to such an extent that they may cease or become irreversibly degraded (in case of a negative impact).</li> <li>When natural functions or receptors are substantially upgraded in relation to their existing condition (in case of a positive impact).</li> </ul> <p>Where relevant, national and/or international standards are used as a benchmark for assessing the impact. Specialised studies may contribute to quantifying the magnitude of impacts, where available and appropriate, with corresponding substantiated justification.</p> | <p><b>Anthropogenic &amp; Socio-economic Environment:</b></p> <p>The intensity may be assessed in terms of the ability of the individuals/communities affected by the Project to cope with or adapt to the negative changes caused by the Project (in the case of a negative impact), or the extent to which their quality of life/well-being will be enhanced as a result of the socio-economic benefits (in the case of a positive impact). Specifically:</p> <p><b>Negligible:</b> No perceptible change in the quality of life of the affected individuals/communities is recorded.</p> <p><b>Low:</b></p> <ul style="list-style-type: none"> <li>The affected individuals/communities can cope with/adapt to the negative impacts with relative ease and maintain their pre-impact quality of life/well-being (in the case of a negative impact).</li> <li>The affected individuals/communities will marginally benefit from the proposed activity and experience a relatively small improvement in their quality of life/well-being (in the case of a positive impact).</li> </ul> <p><b>Medium:</b></p> <ul style="list-style-type: none"> <li>The affected individuals/communities can cope with/adapt to the negative impacts with some difficulty and maintain their pre-impact livelihoods, but only with some degree of support to mitigate the impacts (in the case of a negative impact).</li> <li>The quality of life/well-being of the affected individuals/communities improves moderately as a result of the positive impacts.</li> </ul> <p><b>High:</b></p> <ul style="list-style-type: none"> <li>The affected individuals/communities can cope with/adapt to the negative impacts with significant difficulty and maintain their pre-impact livelihoods only with full support for impact mitigation (in the case of a negative impact).</li> <li>The quality of life/well-being of the affected individuals/communities improves significantly as a result of the positive impacts.</li> </ul> <p><b>Critical:</b></p> <ul style="list-style-type: none"> <li>The affected individuals/communities will not be able to cope with/adapt to the negative changes and will not be able to maintain their pre-impact quality of life/well-being (in the case of a negative impact).</li> <li>The quality of life/well-being of the individuals will improve remarkably because of the positive impacts.</li> </ul> |



#### Extent (EX):

The area of influence affected by the impact, including the project footprint and its immediate surrounding area. In detail:

- Within the Project Footprint:  
The impact is confined to a specific location within the boundaries of the project footprint.
- Local:  
The impact affects a limited geographical area surrounding the boundaries of the Project.
- Regional/National:  
The impact affects significant environmental resources at a regional or national level or is experienced on a regional/national scale (based on administrative boundaries, habitat/ecosystem type, etc.).
- International/Transboundary:  
The impact affects significant environmental resources at an international/transboundary level or is experienced on an international/transboundary scale.
- Critical:  
The impact (whether local or not) affects a critical area.

#### Moment of Occurrence (MO):

The time interval between the start of Project implementation and the manifestation of the impact on the environmental receptor under consideration.

- Immediate:  
The impact occurs simultaneously with the commencement of Project implementation (or within a very short time thereafter).
- Short-term:  
The impact occurs within one year from the start of Project implementation.
- Medium-term:  
The impact occurs between 2 and 10 years from the start of Project implementation.
- Long-term:  
The impact requires more than 10 years from the start of Project implementation to manifest.

#### Duration (PE):

The estimated duration of the impact, from the moment it manifests until the return to the pre-intervention condition, either through natural means or through the implementation of appropriate/targeted measures. In detail:

- Brief:  
The impact is expected to be of very short duration and intermittent/occasional. Its duration is practically negligible.
- Temporary:  
The impact lasts less than 1 year.
- Short-lived:  
The impact lasts from 1 to 10 years.
- Long-lived:  
The impact lasts from 11 to 25 years.
- Permanent:  
The impact lasts more than 25 years.

#### Reversibility (RV):

The ability of the receptor of the corresponding environmental parameter affected by the project/activity to recover through natural means and without human intervention. Impacts are characterised as reversible if the affected receptor can return to its original condition within a time period of less than 25 years.

In detail, reversibility may be:

- Short-term:  
When reversal occurs within 1 year.
- Medium-term:  
When reversal occurs within 2–10 years.
- Long-term:  
When reversal occurs within 11–15 years.

If the affected receptor cannot return to its pre-intervention condition without human intervention within a period of 15 years, the impact is considered irreversible by natural means.

#### Synergy (SI):

The phenomenon whereby the impact caused by an activity acts synergistically with the impacts of other activities—provided they are implemented simultaneously—leading to greater impacts (in terms of type, intensity, duration, extent, etc.) compared to the individual effect of each activity.

In detail, the impact may be:

- Non-synergistic:  
The impact of an activity is isolated, without any synergistic interaction.
- Synergistic:  
The impact of the activity may act synergistically with the impacts of other activities, if implemented simultaneously, resulting in greater impacts compared to the individual action of each activity.
- Highly synergistic:  
The impact of the activity may act synergistically with the impacts of other activities, if implemented simultaneously, resulting in significantly greater impacts compared to the individual action of each activity.

#### Accumulation (AC):

The progressive increase in the scale of the impact on the receptor of the corresponding environmental parameter when the impact persists over time.

In detail, the impact may be:

- Standalone (non-cumulative):  
The effect of the impact is isolated and does not cause additional cumulative impacts.
- Cumulative:  
The effect of the impact progressively increases due to the absence of means for elimination/minimisation when the activity causing the impact continues over an extended period. Additionally, cumulative impacts also arise from the aggregated effect of the activity on a receptor when it is added to other past, present, and future activities, regardless of the responsible party for those activities.

#### Effect (EF):

The cause-effect relationship, also known as the consequence of an activity.

In detail, the effect of an impact may be:

- Direct:  
The impact resulting from a direct interaction between a planned activity of the project and the receptor of a corresponding environmental parameter (e.g. between the occupation of an area and the pre-existing habitats, or between the discharge of effluents and the quality of the receiving water).
- Indirect:  
The impact resulting from other activities that are triggered as a secondary consequence of the Project (e.g. internal migration due to employment opportunities that generates demand for resources).

#### Periodicity (PR):

The manifestation of an impact or the repetition of a phenomenon either irregularly or according to a specific and defined pattern.

In detail, the impact may manifest as:

- Irregular and discontinuous:  
The impact occurs unpredictably and is repeated occasionally without following a specific or clear pattern.
- Continuous:  
The impact occurs in a steady and uninterrupted manner, which does not change significantly over time.
- Periodic:  
The impact occurs according to a specific and defined pattern, in a cyclical and recurring manner.

#### Restoration (MC):

The potential for full or partial restoration/recovery of the affected environmental parameter/receptor or process due

to the Project through the implementation of corrective measures, distinct from recovery through natural means assessed under Reversibility (RV).

In detail, the impact on the receptor may be:

- Restored immediately:  
The recovery/restoration of the receptor to its original condition is achieved through the implementation of corrective measures during the implementation of the proposed interventions or immediately upon their completion.
- Restored in the short-term:  
The recovery/restoration of the receptor to its original condition is achieved through the implementation of corrective measures within 1 year.
- Restored in the medium-term:  
The recovery/restoration of the receptor to its original condition is achieved through the implementation of corrective measures within 2–10 years.
- Restored in the Long-term:  
The recovery/restoration of the receptor to its original condition is achieved through the implementation of corrective measures within 11–15 years.
- Restored Partially:  
The impact is partially reversible through the implementation of corrective measures.
- Compensated/offset:  
The impact is irreversible through corrective measures but may be addressed through compensation/offsetting, where required by the applicable regulatory framework or expressly committed as Project mitigation.
- Cannot be restored:  
The impact is irreversible through the implementation of corrective measures, or the restoration period exceeds 15 years.

The significance of the impact is quantified by matching the corresponding numerical values to the evaluation criteria of the above Table, according to the Scoring Table (Table 10-4) provided below.

**Table 10-4: Scoring of Qualitative Assessment Criteria**

| QUALITATIVE IMPACT CRITERIA | QUALITATIVE ASSESSMENT CRITERIA | VALUE |
|-----------------------------|---------------------------------|-------|
| Nature (S)                  | Positive                        | +1    |
|                             | Negative                        | -1    |
| Intensity (IN)              | Negligible                      | 1     |
|                             | Minor                           | 2     |
|                             | Moderate                        | 4     |
|                             | High                            | 8     |
|                             | Critical                        | 12    |
| Extent (EX)                 | Within Project Site             | 1     |
|                             | Local                           | 2     |
|                             | Regional/National               | 4     |
|                             | International/Transboundary     | 8     |
|                             | Critical                        | +4*   |
| Time of Occurrence (MO)     | Long-term                       | 1     |
|                             | Medium-term                     | 2     |
|                             | Short-term                      | 3     |
|                             | Immediate                       | 4     |

| QUALITATIVE IMPACT CRITERIA                                                                                                 | QUALITATIVE ASSESSMENT CRITERIA  | VALUE |
|-----------------------------------------------------------------------------------------------------------------------------|----------------------------------|-------|
| Duration (PE)                                                                                                               | Brief                            | 1     |
|                                                                                                                             | Temporary                        | 1     |
|                                                                                                                             | Short-lived                      | 2     |
|                                                                                                                             | Long-lived                       | 3     |
|                                                                                                                             | Permanent                        | 4     |
| Reversibility (RV)                                                                                                          | Short-term                       | 1     |
|                                                                                                                             | Medium-term                      | 2     |
|                                                                                                                             | Long-term                        | 3     |
|                                                                                                                             | Irreversible                     | 4     |
| Synergy (SI)                                                                                                                | Non-synergistic                  | 1     |
|                                                                                                                             | Synergistic                      | 2     |
|                                                                                                                             | Highly synergistic               | 4     |
| Accumulation (AC)                                                                                                           | Standalone (non-cumulative)      | 1     |
|                                                                                                                             | Cumulative                       | 4     |
| Effect (EF)                                                                                                                 | Indirect                         | 1     |
|                                                                                                                             | Direct                           | 4     |
| Periodicity (PR)                                                                                                            | Irregular and discontinuous      | 1     |
|                                                                                                                             | Periodic                         | 2     |
|                                                                                                                             | Continuous                       | 4     |
| Restoration (MC)                                                                                                            | Immediately restored             | 1     |
|                                                                                                                             | Short-term restoration           | 2     |
|                                                                                                                             | Medium-term restoration          | 3     |
|                                                                                                                             | Long-term restoration            | 4     |
|                                                                                                                             | Compensated / Partially restored | 4     |
|                                                                                                                             | Not restored                     | 8     |
| * For impacts occurring in critical areas, the value of 4 is added to the corresponding score for the extent of the impact. |                                  |       |

(Source: Conesa, 2010, as adapted by the LDK study team)

The following equation, which results from the weighting of the above criteria, is used to calculate the quantified value of the impact significance, **Im**:

$$Im = S * (3 * IN + 2 * EX + MO + PE + RV + SI + EF + PR + MC + AC)$$

Where, the **Im** prices range from **13** to the maximum value permitted by the scoring system.

As previously mentioned, in the present methodology the probability of occurrence is not included among the criteria for determining the significance of the impact, since the activities and associated impact pathways assessed under routine operations are assumed to occur, where relevant, for the purposes of the assessment. Therefore, the probability of occurrence is not included as a factor in the above equation. Lower-probability accidental and emergency events are assessed separately in Section **Error! Reference source not found..**

The quantified value of the significance of each impact is an absolute value (Im), which constitutes the **Magnitude of the Impact**.

### 10.1.1.3.2 Evaluation of Environmental and Social Impacts

As already stated, the Magnitude of the impact is the quantified value of the significance of each impact and, as such, indicates which of the potential impacts of the proposed project are relevant and potentially significant. However, since the absolute value of the magnitude of the impact (Im) can only be used for comparative consideration among the potential impacts, according to the Conesa method the correspondence of Im values has been standardized into categories, which are distinguished based on specific numerical thresholds and constitute clearly defined classes characterizing the significance of the impacts. The following presents the classification of impact significance, which are defined by the corresponding ranges of Im values, according to the Conesa method (as adapted by the LDK study team).

**Table 10-5: Significance characterization classes of each impact magnitude value (Im)**

| RANGE OF IM VALUES   | SIGNIFICANCE CHARACTERIZATION CLASSES OF EACH IMPACT |
|----------------------|------------------------------------------------------|
| $Im \leq 20$         | Negligible                                           |
| $21 \leq Im \leq 40$ | Low                                                  |
| $41 \leq Im \leq 60$ | Moderate                                             |
| $61 \leq Im \leq 85$ | High                                                 |
| $Im > 85$            | Very High                                            |

Source: Conesa, 2010, as adapted by the LDK study team

The classification of the significance of each impact is used in combination with the evaluation of the Valued Receptors (see Section 10.1.1), in order to determine the **Final Assessment** of each impact, which is characterized as **Negligible, Low, Moderate, Major or Critical** according to the Conesa method (Conesa, 2010), as adapted by the LDK study team (Table 10-6).

**Table 10-6: Final assessment of each environmental and social impact**

|                 |        | Impact Significance Classification |            |             |             |             |
|-----------------|--------|------------------------------------|------------|-------------|-------------|-------------|
|                 |        | Negligible                         | Low        | Moderate    | High        | Very high   |
| VR Significance | Low    | Negligible                         | Negligible | Minor       | Moderate    | Significant |
|                 | Medium | Negligible                         | Minor      | Moderate    | Significant | Critical    |
|                 | High   | Minor                              | Moderate   | Significant | Critical    | Critical    |

Source: Conesa, 2010, as adapted by the LDK study team

The above impact significance categories correspond to the definitions presented in the following Table.

**Table 10-7: Definition of the Significance of Environmental and Social Impacts**

|                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Critical</b>    | Impacts above an acceptable threshold, resulting in permanent loss of environmental quality without the possibility of restoration, regardless of the application of preventive or corrective measures. These impacts are non-reversible.<br><br>Therefore, it is a potentially unacceptable impact, as it corresponds to a severe effect that cannot be adequately mitigated. Alternative locations or designs would need to be considered, or other measures identified to avoid or reduce the impact to an acceptable level, subject to the applicable regulatory decision-making process. |
| <b>Significant</b> | Impacts that require extensive and intensive preventive or corrective measures for the receptor to return to its original state. Even with such measures, the restoration period is medium- to long-term.                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Moderate</b>    | Impacts that do not require extensive and intensive measures for the receptor to return to its original state, or the degree of disturbance is not great, possibly short-term, and recovery is short- to medium-term. In some cases, these impacts are subject to mitigation and require specific corrective actions where applicable, without extensive efforts.                                                                                                                                                                                                                             |
| <b>Minor</b>       | Impacts that cause detectable but not significant changes to the condition of the receptors. They may require mild or no mitigation measures. In some cases, even without the implementation of corrective actions, such minor impacts are of short duration and tend to subside naturally or through simple and limited measures.                                                                                                                                                                                                                                                            |
| <b>Negligible</b>  | Impacts that can be reversed naturally or immediately cease when the activity ends and do not require preventive or corrective measures. Negligible impacts are considered reversible, short-term, and without the need for corrective intervention.                                                                                                                                                                                                                                                                                                                                          |
| <b>Positive</b>    | Impacts that result in an <u>improvement</u> in the quality/condition of the receptor.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

Source: Conesa, 2010, as adapted by the LDK study team

## 10.1.2 Impacts related to climate resilience

### 10.1.2.1 Impacts on climatic and bioclimatic characteristics

No significant adverse impacts on the climatic and bioclimatic characteristics of the study area are expected as a result of the Project during any phase of its implementation. The proposed Asopus-1 exploration drilling campaign is temporary in nature, of limited duration, and does not involve permanent offshore or onshore infrastructure that could alter local climatic, microclimatic, or bioclimatic conditions.

#### 10.1.2.1.1 Drilling preparation and mobilization phase

Due to the nature and scale of the implementation works, the drilling preparation and mobilization phase of the Project is not expected to cause any change in the climatic and bioclimatic characteristics of the study area. Mobilisation activities, including the preparation and operation of the logistics base, loading and unloading activities at the port, helicopter transfers, and transit of the MODU and support vessels to the well location, are temporary and of short duration. These activities will not result in any measurable changes to local or regional climatic conditions, such as temperature, precipitation, humidity, or wind patterns.

Minor greenhouse gas (GHG) emissions will be generated through fuel combustion from vessels, helicopters, cargo handling equipment, and road transport; however, these emissions will be short-term and negligible in terms of their influence on the climatic and bioclimatic characteristics of the area.

In summary, with regard to their significance, the impacts expected on climatic and bioclimatic characteristics during the mobilisation phase are assessed as negative (-), of negligible intensity (IN=1), localised (EX=2), immediate (MO=4), coincident with mobilisation activities (PE=1), short-term reversible (RV=1), synergistic (SI=2), indirect (EF=1), discontinuous (PR=1), of short-term recovery (MC=2), and non-cumulative (AC=1). In terms of their overall significance, these impacts are assessed as **negligible**.

| Impacts on Climatic and Bioclimatic Characteristics  |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                        | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
|                                                      |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
| Mobilisation of MODU to well site – power generation | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 1           | 1                | 2             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          |

#### 10.1.2.1.2 Exploration drilling operations phase

During the drilling operations phase, no direct adverse effects on local climate, microclimate, or bioclimatic conditions are anticipated. The offshore drilling campaign will be undertaken using a dynamically positioned MODU and associated support vessels over a limited period and will not involve permanent structures or activities capable of altering climatic processes.

The principal interaction with climatic receptors during this phase relates to the generation of atmospheric emissions, including GHG emissions, resulting from the continuous operation of the MODU, support vessels, power generation systems, and helicopter logistics. Although these emissions contribute incrementally to global climate change, the contribution of the Project is expected to be minor in the context of regional and global emissions inventories due to the temporary and exploratory nature of the activity.

Climatic and meteorological conditions, including wind, wave conditions, and extreme weather events, will also influence operational safety and planning, and will therefore be continuously monitored throughout drilling operations.

In summary, with regard to their significance, the impacts expected on climatic and bioclimatic characteristics during the drilling operations phase are assessed as negative (-), of negligible to low intensity (IN=1-2), widespread but limited to the offshore operational area (EX=2), immediate (MO=4), temporary throughout the drilling period (PE=1), short-term reversible following cessation of activities (RV=1), synergistic (SI=2), indirect (EF=1), continuous during operations (PR=4) or occasional (PR=1), of short-term recovery after completion of drilling (MC=2), and non-cumulative (AC=1). Overall, these impacts are assessed as **minor**.

| Impacts on Climatic and Bioclimatic Characteristics |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |     |                            |                     |
|-----------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|-----|----------------------------|---------------------|
| Project Activities / Elements                       | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |     | Valued Receptor Assessment | Impact Significance |
| MODU and support/supply vessel power generation     | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 1           | 4                | 2             | 1                 | 26                    | Low | Medium                     | MINOR               |



| Impacts on Climatic and Bioclimatic Characteristics     |   |   |   |   |   |   |   |   |   |   |   |    |            |        |            |
|---------------------------------------------------------|---|---|---|---|---|---|---|---|---|---|---|----|------------|--------|------------|
| Operation of onshore facilities, equipment and vehicles | - | 1 | 2 | 4 | 1 | 1 | 2 | 1 | 4 | 2 | 1 | 23 | Low        | Medium | MINOR      |
| Helicopter transfers between heliport and MODU          | - | 1 | 2 | 4 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 20 | Negligible | Medium | NEGLIGIBLE |

### 10.1.2.1.3 Demobilisation and abandonment phase

No significant adverse impacts on climatic and bioclimatic characteristics are expected during the abandonment and demobilisation phase. Activities associated with well plugging and abandonment, recovery of subsea equipment, demobilisation of the MODU, and removal of temporary onshore facilities are of limited duration and will not alter local or regional climatic conditions.

Similar to the mobilisation phase, temporary GHG emissions will be generated through vessel operations, equipment use, and transport activities associated with demobilisation; however, these emissions will be short-term and minor. Consequently, the abandonment and demobilisation phase is not expected to result in any measurable effects on the climatic or bioclimatic characteristics of the study area.

In summary, with regard to their significance, the impacts expected on climatic and bioclimatic characteristics during the demobilisation and abandonment phase are assessed as negative (-), of negligible intensity (IN=1), localised (EX=2), immediate (MO=4), coincident with demobilisation activities (PE=1), short-term reversible (RV=1), synergistic (SI=2), indirect (EF=1), discontinuous (PR=1), of short-term recovery (MC=2), and non-cumulative (AC=1). In terms of their overall significance, these impacts are assessed as **negligible**.

| Impacts on Climatic and Bioclimatic Characteristics |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|-----------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                       | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| MODU circulation and surface handling operations    | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 1           | 1                | 2             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          |

### 10.1.2.2 Climate change mitigation

The carbon footprint of the Asopus-1 exploration drilling campaign was quantified in accordance with ISO 14064-1:2018, considering direct greenhouse gas (GHG) emissions arising from offshore and onshore supporting activities. Emissions were classified according to the GHG Protocol into Scope 1 (direct fuel combustion), Scope 2 (electricity for onshore logistics facilities) and Scope 3 (other indirect emissions associated with supply chain activities, waste management and contractor services).

The Project comprises a temporary offshore exploration drilling campaign of limited duration and does not include hydrocarbon production, routine flaring, long-term operation of fixed installations or permanent

infrastructure. Consequently, the Project's carbon footprint is almost entirely associated with fuel combustion by the Mobile Offshore Drilling Unit (MODU), support vessels, helicopter operations and onshore logistics support activities.

Based on the activity data of the Project, the emission factors derived from the annual publication of the Ministry of Environment and Energy for implementation of the National Climate Law and the 2006 IPCC Guidelines, the total direct greenhouse gas emissions (Scope 1) of the drilling campaign are estimated at 15,596.56 tCO<sub>2</sub>eq. Of this total, approximately 15,534.36 tCO<sub>2</sub>eq originate from offshore operations, while only 62.20 tCO<sub>2</sub>eq arise from onshore support activities. The offshore drilling unit (MODU) constitutes the dominant emission source, accounting for approximately 61% of total emissions, followed by offshore support vessels (approximately 36%), whereas helicopter and onshore activities contribute only marginally.

The calculated carbon emissions are temporary, associated exclusively with the exploration drilling campaign. No routine hydrocarbon production, processing, storage or export activities are included within the Project scope. Furthermore, no well testing involving hydrocarbon flow, routine venting or routine flaring is currently planned. Accordingly, dedicated methane leak detection and repair (LDAR) obligations under Regulation (EU) 2024/1787 on methane emissions in the energy sector are not expected to be triggered. Nevertheless, contractor management systems and incident reporting procedures will be implemented to ensure that any accidental methane releases are identified, recorded and reported in accordance with applicable legislation.

The carbon footprint assessment was undertaken in the context of the national and European climate policy framework, including the European Climate Law, the European Green Deal, the National Climate Law (Law 4936/2022) and the revised National Energy and Climate Plan (NECP, GG 6983/B/19.12.2024). According to the revised NECP, total national greenhouse gas emissions in Greece were approximately 76.9 Mt CO<sub>2</sub>eq in 2022, while national emissions are projected to decrease substantially by 2030 and towards climate neutrality by 2050.

Within this context, the total carbon footprint of the Asopus-1 drilling campaign corresponds to approximately 0.020% of Greece's total greenhouse gas emissions in 2022. The Project will be temporary, will not involve hydrocarbon production, and offshore operations will be limited to the exploration drilling campaign. As a result, it is not expected to materially affect Greece's progress towards the national and European climate targets for 2030 and 2050.

In addition, the MODU operator, Stena Drilling, operates an Energy Management System certified in accordance with ISO 50001:2018, while the MODU carries the voluntary DNV Abate (P) notation, which promotes efficient power generation, fuel optimisation and continuous improvement in greenhouse gas management performance. These measures are considered consistent with recognised international good industry practice for reducing energy consumption and associated emissions.

Although greenhouse gas emissions will occur during drilling operations, these emissions are unavoidable for offshore exploration activities and are inherently limited by the short duration of the drilling campaign. The Project does not create a long-term source of greenhouse gas emissions and does not compromise the achievement of national or EU climate objectives. Consequently, the contribution of the Project to climate change is considered negative, of low magnitude, temporary, reversible and not significant at national or regional scale.

In conclusion, as summarised in Table 10-8 (in accordance with the table provided in Annex 8 of Ministerial Decision ΥΠΕΝ/ΔΙΠΑ/143898/9866, GG 7322/Β/31.12.2024), the carbon footprint of the Project, which is associated exclusively with the temporary exploration drilling campaign and its supporting activities, is considered proportionately negligible at the national scale. Considering the absence of permanent installations, the lack of hydrocarbon production activities and the time-limited duration of the drilling campaign, the Project is not expected to hinder the achievement of national or European greenhouse gas emission reduction targets or the objective of climate neutrality by 2050. Therefore, the Project is considered fully compatible with the objectives of the revised National Energy and Climate Plan (NECP), the European Green Deal and the broader European climate policy framework.

**Table 10-8: Project Impacts in Relation to Climate Change Mitigation Issues (Annex 8 of MD 143898/9866/2024)**

| CLIMATE CHANGE MITIGATION ISSUE                                                                                                                                                | PROJECT IMPACTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Alignment with the Paris Agreement and the "Do No Significant Harm" principle                                                                                                  | The Project consists of a temporary offshore exploration drilling campaign without hydrocarbon production, routine venting or flaring. The total direct carbon footprint is estimated at 15,596.56 tCO <sub>2</sub> eq, representing approximately 0.020% of Greece's total GHG emissions in 2022. The Project is therefore considered compatible with the objectives of the Paris Agreement, the European Climate Law and the National Energy and Climate Plan and does not compromise the achievement of climate neutrality objectives. |
| Direct greenhouse gas emissions                                                                                                                                                | Direct emissions arise primarily from fuel combustion by the MODU, support vessels and helicopter. Total Scope 1 emissions are estimated at 15,596.56 tCO <sub>2</sub> eq. Emissions are temporary, limited to the drilling campaign duration and managed through application of recognised industry standards and energy efficiency measures.                                                                                                                                                                                            |
| Indirect greenhouse gas emissions due to an increased demand for energy                                                                                                        | Limited indirect emissions (Scope 2) may arise from electricity consumption associated with logistics base activities. These emissions are expected to be minor compared with offshore fuel combustion and will progressively decrease as the national electricity mix decarbonises in accordance with the revised NECP.                                                                                                                                                                                                                  |
| Indirect greenhouse gas emissions caused by any supporting activities or infrastructure that is directly linked to the implementation of the proposed project (e.g. transport) | Additional indirect emissions may arise from supply chain activities, contractor transport, waste management and logistics support (Scope 3). These emissions are temporary and associated with the short-term implementation of the drilling campaign.                                                                                                                                                                                                                                                                                   |

### 10.1.2.3 Climate change adaptation

The resilience and adaptive capacity of the Project to climate change are assessed and evaluated. The assessment is based on the analysis of climate vulnerability (i.e. the sensitivity and exposure of the Project to climate-related hazards), climate risk analysis (i.e. the likelihood of occurrence and potential consequences of climate-related hazards), and the review of the compatibility of the Project with existing climate change adaptation strategies and plans.

The screening stage includes an assessment of the Project's vulnerability to climate change. The vulnerability assessment is undertaken through three sequential steps comprising the following methodological elements:

- Analysis of Project sensitivity to climate-related hazards;

- Analysis of current and future exposure of the Project to climate hazards under relevant climate scenarios;
- Integration of sensitivity and exposure analyses in order to determine the overall climate vulnerability of the Project.

The outcome of the vulnerability assessment forms the basis for the subsequent climate risk assessment and for the identification, where necessary, of adaptation and resilience measures to ensure the safe and sustainable implementation of the Project under both current and future climatic conditions.

The National Coordination Authority of the Ministry of Development and Investments, in cooperation with the JASPERS (Joint Assistance to Support Projects in European Regions) initiative and with the support of the Ministry of Environment and Energy and the Ministry of Infrastructure and Transport, developed a methodology for assessing the climate resilience of infrastructure projects with an expected operational lifetime of at least five (5) years, in accordance with Article 73(2)(j) of Regulation (EU) 2021/1060.

The Project comprises a short-duration offshore exploration drilling campaign and therefore falls outside the formal scope of the methodology. Nonetheless, the assessment adopts the underlying principles of sensitivity, exposure and vulnerability analysis, proportionately adapted to the temporary nature and operational characteristics of the Asopus-1 exploration well, in order to evaluate its resilience to climate-related hazards and consistency with applicable climate adaptation policies.

### 10.1.2.3.1 Screening

#### 10.1.2.3.1.1 Sensitivity analysis

The purpose of the sensitivity analysis is to identify the climate hazards relevant to the specific type of Project, based on its design, mobilisation and operational characteristics, irrespective of its geographical location. Sensitivity of a project therefore relates primarily to its intrinsic characteristics.

Important inputs to the sensitivity analysis include the technical and design characteristics of the Project, as defined in the relevant engineering and design studies. A climate hazard is understood as the potential occurrence of a natural physical event or trend that may cause loss of life, injury, or other adverse health impacts, as well as damage to or loss of property, infrastructure, livelihoods, services, ecosystems and environmental resources.

A comprehensive inventory of climate hazards is provided in the EU Taxonomy Climate Delegated Act<sup>60</sup> and in the European Commission Technical Guidance on Climate Proofing of Infrastructure (2021/C 373/01). These documents distinguish between chronic climate hazards and acute (extreme weather) hazards and classify them into broad categories, including:

- Temperature-related hazards (e.g. heat stress, wildfires);
- Wind-related hazards (e.g. storms, cyclones);

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<sup>60</sup> Commission Delegated Regulation (EU) 2021/2139 of 4 June 2021 supplementing Regulation (EU) 2020/852 of the European Parliament and of the Council by establishing the technical screening criteria for determining the conditions under which an economic activity qualifies as contributing substantially to climate change mitigation or climate change adaptation and for determining whether that economic activity causes no significant harm to any of the other environmental objectives.

- Water-related hazards (e.g. sea level rise, drought, flooding);
- Solid mass-related hazards (e.g. coastal erosion, landslides).

Additional climate hazard inventories are provided in JASPERS guidance documents, many of which overlap with the European Commission classifications. Certain hazards included in international inventories may not be relevant in the Greek context due to geographical and climatic conditions (for example, hazards associated with permafrost thawing). Furthermore, climate hazards identified in the applicable Regional Climate Change Adaptation Plans have also been considered.

For the purposes of the present ESIA, a consolidated climate hazard inventory has been developed by combining the above sources. The sensitivity assessment for the Project, following the methodology and screening approach adopted by the General Secretariat for Public Investments and the National Strategic Reference Framework (NSRF) (<https://adaptivegreecehub.gr/eleghos-klimatikis-anthektikotitas>), is summarised in Table 10-9.

Sensitivity categories are defined qualitatively as Low, Medium or High, taking into account the Project's mobilisation, drilling and abandonment/decommissioning characteristics, associated activities and services, and its integration within the surrounding environment. The overall sensitivity rating reflects the combined influence of these factors in accordance with the climate resilience assessment methodology adopted for the Project.

**Table 10-9: Sensitivity Analysis**

| CLIMATE-RELATED HAZARDS                                      | SENSITIVITY ANALYSIS       |          |                       |                             |                     |
|--------------------------------------------------------------|----------------------------|----------|-----------------------|-----------------------------|---------------------|
|                                                              | MOBILISATION / PREPARATION | DRILLING | ACTIVITIES / SERVICES | INTEGRATION WITHIN THE AREA | OVERALL SENSITIVITY |
| Heatwave                                                     | Low                        | Low      | Low                   | Low                         | Low                 |
| Cold wave                                                    | Low                        | Low      | Low                   | Low                         | Low                 |
| Frost (number of days with Tmin < 0°C)                       | Low                        | Low      | Low                   | Low                         | Low                 |
| Wildfire                                                     | Low                        | Low      | Medium                | Low                         | Medium              |
| Cyclones, severe storms, hurricanes                          | High                       | High     | High                  | Medium                      | High                |
| Storms (including snowstorms and dust storms)                | Medium                     | Medium   | Medium                | Medium                      | Medium              |
| Tornadoes / Extreme winds                                    | High                       | High     | High                  | High                        | High                |
| Drought                                                      | Low                        | Low      | Low                   | Low                         | Low                 |
| Heavy precipitation (rain, hail, snow/ice)                   | Low                        | Low      | Medium                | Medium                      | Medium              |
| Flooding (coastal, fluvial, pluvial or groundwater flooding) | Medium                     | Medium   | Medium                | Medium                      | Medium              |
| Landslides / Soil erosion                                    | Low                        | Low      | Low                   | Low                         | Low                 |
| Land subsidence                                              | Low                        | Low      | Low                   | Low                         | Low                 |
| Changes in average air temperature                           | Low                        | Low      | Low                   | Low                         | Low                 |
| Urban heat island effect                                     | Low                        | Low      | Low                   | Low                         | Low                 |
| Heat stress                                                  | Low                        | Low      | Low                   | Low                         | Low                 |
| Temperature variability                                      | Low                        | Low      | Low                   | Low                         | Low                 |

| CLIMATE-RELATED HAZARDS                                                      | SENSITIVITY ANALYSIS       |          |                       |                             |                     |
|------------------------------------------------------------------------------|----------------------------|----------|-----------------------|-----------------------------|---------------------|
|                                                                              | MOBILISATION / PREPARATION | DRILLING | ACTIVITIES / SERVICES | INTEGRATION WITHIN THE AREA | OVERALL SENSITIVITY |
| Changes in solar radiation                                                   | Low                        | Low      | Low                   | Low                         | Low                 |
| Changes in wind characteristics                                              | Medium                     | High     | High                  | Medium                      | High                |
| Changes in precipitation characteristics and patterns (rain, hail, snow/ice) | Low                        | Low      | Low                   | Low                         | Low                 |
| Precipitation variability or hydrological variability                        | Low                        | Low      | Low                   | Low                         | Low                 |
| Changes in mean water temperature of water bodies                            | Low                        | Medium   | Low                   | Medium                      | Medium              |
| Ocean acidification / changes in seawater salinity                           | Low                        | Medium   | Low                   | Medium                      | Medium              |
| Saltwater intrusion and salinisation of surface and groundwater              | Low                        | Low      | Low                   | Low                         | Low                 |
| Sea level rise                                                               | Medium                     | Medium   | Medium                | Medium                      | Medium              |
| Water availability and water resource stress                                 | Low                        | Low      | Low                   | Low                         | Low                 |
| Coastal erosion                                                              | Low                        | Medium   | Medium                | Medium                      | Medium              |
| Soil degradation, salinisation and desertification                           | Low                        | Low      | Low                   | Low                         | Low                 |
| Changes in the length of farming seasons                                     | Low                        | Low      | Low                   | Low                         | Low                 |

#### 10.1.2.3.1.2 Exposure analysis

The purpose of the exposure analysis is to identify the climate hazards relevant to the geographical location of the Project, both under current and future climatic conditions, irrespective of the type of Project activity. Exposure therefore relates to the extent to which the Project is likely to be exposed to climate-related hazards as a result of its location and the prevailing and projected climatic conditions in the study area.

For the exposure analysis, the same climate hazard inventory adopted for the sensitivity assessment has been used. The assessment considers both present-day climate conditions and projected future climate scenarios, taking into account the available climatic information presented in Chapter 8 of this ESIA, together with regional climate projections and relevant climate adaptation planning documents.

For the purposes of this assessment, future climate conditions have been considered over a timeframe relevant to the temporary duration of the offshore exploration drilling campaign, while also taking into account longer-term (near future, 2031 – 2060) climate trends that may influence the operational environment within the wider offshore area.

More specifically, the exposure analysis for the Project, based on the information presented in Chapter 8 and following the methodology and screening approach developed by the General Secretariat for Public Investments and NSRF (<https://geo.adaptivegreecehub.gr>), is summarised in Table 10-10, using relevant indices for the intermediate (RCP 4.5) and extreme (RCP 8.5) scenarios.

**Table 10-10: Exposure Assessment for Climate Hazards**

| CLIMATE-RELATED HAZARDS                                      | RELEVANT INDEX                                                                                                                                                                                            | RCP 4.5       | RCP 8.5       | COMMENTS / GEOGRAPHICAL LOCATION |
|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------|----------------------------------|
| Heatwave                                                     | Number of days with TX > 35 °C - very hot days                                                                                                                                                            | 12 – 13       | 14 – 15       | Port of Igoumenitsa              |
| Frost                                                        | Number of days with Tmin < 0 °C                                                                                                                                                                           | 17 – 19       | 16 – 18       | Port of Igoumenitsa              |
| Wildfire                                                     | Mean Forest Fire Weather Index (FWI) during the fire season (May–October)                                                                                                                                 | 31.6 – 31.8   | 31.8 – 32.0   | Port of Igoumenitsa              |
| Tornadoes / Extreme winds                                    | Mean wind velocity (m/s)                                                                                                                                                                                  | 4.0 – 4.7     | 4.0 – 4.7     | West shores of Corfu             |
|                                                              |                                                                                                                                                                                                           | 3.3 – 3.4     | 3.2 – 3.3     | Port of Igoumenitsa              |
| Drought                                                      | Maximum number of consecutive days with PR < 1mm – maximum dry spell duration (in days)                                                                                                                   | 56 – 57       | 54 – 55       | Port of Igoumenitsa              |
| Heavy precipitation (rain, hail, snow/ice)                   | Number of days with PR > 10mm - days with heavy rainfall                                                                                                                                                  | 45 – 47       | 44 – 46       | Port of Igoumenitsa              |
| Flooding (coastal, fluvial, pluvial or groundwater flooding) | The Port of Igoumenitsa is located within an Area of Potential Significant Flood Risk (APSFR) ELO5APSFR008 (Kalamas river down coarse-delta and coastal area of Igoumenitsa) (Figure 10-1).               |               |               |                                  |
| Landslides / Soil erosion                                    | The Port of Igoumenitsa is not located on sloping ground                                                                                                                                                  |               |               |                                  |
| Urban heat island effect                                     | The Port of Igoumenitsa is not located within a densely built urban area and is therefore considered to have low exposure to urban heat island effects and thermal hotspots.                              |               |               |                                  |
| Heat stress                                                  |                                                                                                                                                                                                           |               |               |                                  |
| Temperature variability                                      | Mean minimum temperature (°C) – TN                                                                                                                                                                        | 12.1 – 12.3   | 12.5 – 12.7   | Port of Igoumenitsa              |
|                                                              | Mean maximum temperature (°C) – TX                                                                                                                                                                        | 20.9 – 21.0   | 21.2 – 21.3   |                                  |
| Changes in solar radiation                                   | Mean annual received short wave radiation (Watt/m <sup>2</sup> )                                                                                                                                          | 188.0 – 188.3 | 188.2 – 188.5 | Port of Igoumenitsa              |
| Sea level rise                                               | The Port of Igoumenitsa is located within the coastal zone, as defined in Law 4546/2018 (GG 101/A/2018). However, it is not within an area that will be flooded by potential sea level rise (Figure 10-2) |               |               |                                  |
| Water availability and water resource stress                 | The Asopus-1 Project does not require significant freshwater resources (>1,000,000 m <sup>3</sup> /year); therefore, its sensitivity to water availability and water stress is considered Low.            |               |               |                                  |

With regard specifically to flood risk, the Project's exposure is High, as the shore base is partly within the Area of Potential Significant Flood Risk (APSFR) ELO5APSFR008 (Kalamas river down coarse-delta and coastal area of Igoumenitsa), and within modelled inundation areas associated with fluvial flooding scenarios corresponding to return periods of T=50 years, T=100 years, and T=1000 years (Figure 10-1).





Source: Flood Risk Maps, <https://gis.floods.ypeka.gr>

**Figure 10-1: APSFR EL05APSFR008 in the area of Igoumenitsa Port**

Regarding the risk source of sea level rise, the exposure of the Project was assessed as low, as the area of the examined site is located in regions not identified by the referenced mapping as subject to inundation under the assessed sea-level-rise scenario of up to 1 metre.



Source: Flood Risk Maps, <https://gis.floods.vpeka.gr>

Figure 10-2: Depth due to sea level rise for a return period of T=100 years

The overall exposure to climate related hazards is qualitatively classified as Low, Medium or High for both current conditions and future climate conditions. The overall exposure rating is subsequently derived from the combination of these two assessments and provides the basis for the subsequent climate vulnerability assessment of the Project.

Table 10-11: Exposure Analysis

| CLIMATE-RELATED HAZARDS                                      | EXPOSURE ANALYSIS  |                   |                |
|--------------------------------------------------------------|--------------------|-------------------|----------------|
|                                                              | CURRENT CONDITIONS | FUTURE CONDITIONS | TOTAL EXPOSURE |
| Heatwave                                                     | Low                | Low               | Low            |
| Cold wave                                                    | Low                | Low               | Low            |
| Frost (number of days with Tmin < 0 °C)                      | Low                | Low               | Low            |
| Wildfire                                                     | Low                | Low               | Low            |
| Cyclones, severe storms, hurricanes                          | Low                | Low               | Low            |
| Storms (including snowstorms and dust storms)                | Low                | Low               | Low            |
| Tornadoes / Extreme winds                                    | Low                | Low               | Low            |
| Drought                                                      | Low                | Low               | Low            |
| Heavy precipitation (rain, hail, snow/ice)                   | Low                | Low               | Low            |
| Flooding (coastal, fluvial, pluvial or groundwater flooding) | Medium             | High              | High           |
| Landslides / Soil erosion                                    | Low                | Low               | Low            |

| CLIMATE-RELATED HAZARDS                                                      | EXPOSURE ANALYSIS  |                   |                |
|------------------------------------------------------------------------------|--------------------|-------------------|----------------|
|                                                                              | CURRENT CONDITIONS | FUTURE CONDITIONS | TOTAL EXPOSURE |
| Land subsidence                                                              | Low                | Low               | Low            |
| Changes in average air temperature                                           | Low                | Low               | Low            |
| Urban heat island effect                                                     | Low                | Low               | Low            |
| Heat stress                                                                  | Low                | Low               | Low            |
| Temperature variability                                                      | Low                | Low               | Low            |
| Changes in solar radiation                                                   | Low                | Low               | Low            |
| Changes in wind characteristics                                              | Medium             | Medium            | Medium         |
| Changes in precipitation characteristics and patterns (rain, hail, snow/ice) | Low                | Low               | Low            |
| Precipitation variability or hydrological variability                        | Low                | Low               | Low            |
| Changes in mean water temperature of water bodies                            | Low                | Low               | Low            |
| Ocean acidification / changes in seawater salinity                           | Low                | Low               | Low            |
| Saltwater intrusion and salinisation of surface and groundwater              | Low                | Low               | Low            |
| Sea level rise                                                               | Low                | Medium            | Medium         |
| Water availability and water resource stress                                 | Low                | Low               | Low            |
| Coastal erosion                                                              | Low                | Low               | Low            |
| Soil degradation, salinisation and desertification                           | Low                | Low               | Low            |
| Changes in the length of farming seasons                                     | Low                | Low               | Low            |

#### 10.1.2.3.1.3 Vulnerability Analysis

The vulnerability analysis combines the results of the exposure and sensitivity assessments, to identify which climate-related hazards are relevant to the Project, considering both the nature of the Project and its geographical location. It provides the basis for determining whether the assessment should proceed to the second stage of a detailed climate risk analysis.

For the purposes of sensitivity and exposure assessments, a three-level rating scale (Low, Medium, High) has been adopted to indicate the degree of vulnerability associated with each climate-related hazard.

Where a given hazard is relevant to both the sensitivity and exposure of the Project, the resulting vulnerability of the Project to that hazard is determined through the combination of the two assessments. The overall vulnerability rating therefore reflects both the intrinsic susceptibility of the Project to a specific climate hazard and the extent to which the Project is exposed to that hazard under present and future climatic conditions.

$$\text{VULNERABILITY} = \text{COMBINATION} \{ \text{SENSITIVITY}, \text{EXPOSURE} \}$$

If the vulnerability analysis demonstrates, with appropriate justification, that the Project is not vulnerable to any climate-related hazard, no further climate risk analysis is required, and the climate adaptation assessment may be considered complete.

However, where medium or high levels of vulnerability are identified for specific hazards, a detailed climate risk assessment should be undertaken for each of these hazards.

More specifically, the vulnerability assessment for the Project, undertaken in accordance with the assessment tool developed by the General Secretariat for Public Investments and NSRF, is summarised in the following Table.

**Table 10-12: Vulnerability Assessment for the Project**

| CLIMATE-RELATED HAZARDS                                                      | SENSITIVITY | EXPOSURE | VULNERABILITY |
|------------------------------------------------------------------------------|-------------|----------|---------------|
| Heatwave                                                                     | Low         | Low      | Low           |
| Cold wave                                                                    | Low         | Low      | Low           |
| Frost (number of days with Tmin < 0°C)                                       | Low         | Low      | Low           |
| Wildfire                                                                     | Medium      | Low      | Low           |
| Cyclones, severe storms, hurricanes                                          | High        | Low      | Medium        |
| Storms (including snowstorms and dust storms)                                | Medium      | Low      | Low           |
| Tornadoes / Extreme winds                                                    | High        | Low      | Medium        |
| Drought                                                                      | Low         | Low      | Low           |
| Heavy precipitation (rain, hail, snow/ice)                                   | Medium      | Low      | Low           |
| Flooding (coastal, fluvial, pluvial or groundwater flooding)                 | Medium      | High     | High          |
| Landslides / Soil erosion                                                    | Low         | Low      | Low           |
| Land subsidence                                                              | Low         | Low      | Low           |
| Changes in average air temperature                                           | Low         | Low      | Low           |
| Urban heat island effect                                                     | Low         | Low      | Low           |
| Heat stress                                                                  | Low         | Low      | Low           |
| Temperature variability                                                      | Low         | Low      | Low           |
| Changes in solar radiation                                                   | Low         | Low      | Low           |
| Changes in wind characteristics                                              | High        | Medium   | High          |
| Changes in precipitation characteristics and patterns (rain, hail, snow/ice) | Low         | Low      | Low           |
| Precipitation variability or hydrological variability                        | Low         | Low      | Low           |
| Changes in mean water temperature of water bodies                            | Medium      | Low      | Low           |
| Ocean acidification / changes in seawater salinity                           | Medium      | Low      | Low           |



| CLIMATE-RELATED HAZARDS                                         | SENSITIVITY | EXPOSURE | VULNERABILITY |
|-----------------------------------------------------------------|-------------|----------|---------------|
| Saltwater intrusion and salinisation of surface and groundwater | Low         | Low      | Low           |
| Sea level rise                                                  | Medium      | Medium   | Medium        |
| Water availability and water resource stress                    | Low         | Low      | Low           |
| Coastal erosion                                                 | Medium      | Low      | Low           |
| Soil degradation, salinisation and desertification              | Low         | Low      | Low           |
| Changes in the length of farming seasons                        | Low         | Low      | Low           |

The above analysis indicates that medium or high levels of vulnerability may arise for certain climate-related hazards. Consequently, where such vulnerability levels have been identified, a detailed climate risk assessment has been undertaken for each relevant hazard, as presented in the following Section.

#### 10.1.2.3.2 Risk assessment

The risk assessment is undertaken for those climate hazards identified through the vulnerability assessment as presenting medium or high levels of vulnerability. Risk assessment represents the combination of the likelihood of occurrence of each climate hazard identified during the vulnerability screening stage and the magnitude of the potential consequences associated with that hazard.

Various approaches may be used to describe the likelihood of occurrence of climate hazards. However, it is important to initially define the scale that will be applied and clearly explain how the likelihood of occurrence is evaluated and what each likelihood category represents. The selected scale should be appropriate to the characteristics of the Project and should be applied consistently throughout the assessment. In accordance with the European Commission Technical Guidance on the Climate Proofing of Infrastructure (2021/C 373/01), the likelihood of occurrence of a specific hazard may be described using either qualitative or quantitative criteria.

Each likelihood category should be accompanied by a clear description. For example, where qualitative descriptors such as unlikely, possible or likely are used, the meaning of each category in the context of the specific climate hazard and Project should be explicitly defined.

With regard to the assessment of consequences, the Technical Guidance emphasises that consideration should be given not only to direct impacts, but also to potential secondary, indirect and cumulative effects. The assessment should therefore consider the adaptive capacity of the wider system within which the infrastructure operates. Adaptive capacity refers to the ability of systems, institutions, humans and other organisms to adjust to potential damage, take advantage of opportunities, or respond to the consequences of climate change.

For the purposes of the present ESIA, risk assessment has been undertaken by combining the likelihood of occurrence of each relevant climate hazard with the severity of its potential consequences for the Project. The assessment considers both current and future climatic conditions over the duration of the drilling

campaign and associated onshore support activities. The results of the risk assessment are presented in the following sections for those hazards identified as having medium or high vulnerability during the screening stage.

For the purposes of the climate risk assessment, the severity (or magnitude) of impacts should be evaluated against a predefined scale for each identified climate hazard. It is important that the selected methodology clearly defines the assessment scale used to determine the severity or magnitude of impacts and explains the criteria associated with each rating category. The scale adopted should be proportionate to the characteristics, scale and operational context of the Project. Each severity category should be supported by a descriptive definition; for example, where a rating such as “catastrophic” is used, its implications for the specific Project should be explicitly defined.

Potential consequences may relate to damage or disruption affecting physical assets and operations, occupational health and safety, environmental and social receptors (including impacts on vulnerable groups), economic performance, and other relevant aspects of Project implementation and operation.

For the purposes of the present assessment, the severity of consequences arising from each climate hazard has been evaluated qualitatively, considering the temporary nature of the Asopus-1 exploration drilling campaign, the offshore location of the well, the limited duration of activities, and the existing technical and operational controls incorporated into the Project design. The assessment considers not only direct effects on Project infrastructure and operations, but also potential indirect, secondary and cumulative consequences, including disruption to logistics and marine operations, health and safety implications for personnel, and potential environmental incidents associated with extreme weather conditions.

For the implementation of the risk assessment, a quantitative scale has been defined for the probability of occurrence of climate-related hazards, as well as a severity (magnitude) scale for their potential impacts, in accordance with the provisions of the Climate Resilience Assessment Framework for Infrastructure Projects<sup>61</sup>. The following tables present the calibration of the probability scale for the occurrence of climate hazards within the Project context, and the calibration of the severity scale of impacts. The subsequent section provides the resulting risk evaluation based on the combination of these parameters.

**Table 10-13: Probability of Occurrence Scale (Climate-Related Hazards)**

| LIKELIHOOD     | RATING | DESCRIPTION / QUANTITATIVE ESTIMATION                         |
|----------------|--------|---------------------------------------------------------------|
| Rare           | 1      | 5% likelihood of occurrence over the lifetime of the Project  |
| Unlikely       | 2      | 20% likelihood of occurrence over the lifetime of the Project |
| Moderate       | 3      | 50% likelihood of occurrence over the lifetime of the Project |
| Likely         | 4      | 80% likelihood of occurrence over the lifetime of the Project |
| Almost certain | 5      | 95% likelihood of occurrence over the lifetime of the Project |

**Table 10-14: Severity (Magnitude) of Impacts Scale**

| CONSEQUENCE | RATING | DESCRIPTION / QUALITATIVE ESTIMATION |
|-------------|--------|--------------------------------------|
|-------------|--------|--------------------------------------|

<sup>61</sup> Interim Framework for the Assessment of Climate Resilience of Infrastructure Projects submitted for co-financing under ESF+ 2021–2027 programmes, Ministry of Finance, General Secretariat for Public Investments and ESF, National Coordination Authority, General Secretariat for Public Investments and ESF, Ministry of Development and Investments, December 2022.

|               |   |                                                                                                                                                   |
|---------------|---|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Insignificant | 1 | Insignificant impact that can be absorbed through normal activity                                                                                 |
| Minor         | 2 | An adverse event that affects normal activity, resulting in localized impacts                                                                     |
| Moderate      | 3 | A serious event that requires additional emergency business continuity actions, resulting in moderate impacts                                     |
| Major         | 4 | A critical event that requires emergency actions, resulting in significant, widespread, or long-term impacts                                      |
| Catastrophic  | 5 | Disaster with the potential to lead to shut down or collapse or loss of the asset / network, resulting in significant harm and widespread impacts |

Having assessed the likelihood and the impact of each hazard, the significance level of each potential risk can be estimated by combining the two factors. The risks can be plotted on a risk matrix (as part of the overall project risk assessment) to identify the most significant potential risks and those where adaptation measures need to be taken.

### Risk = Likelihood x Impacts

The outcome of the risk assessment can be summarised in a table presenting the likelihood of occurrence and the magnitude (severity) of impacts associated with the key climate-related hazards. The table identifies the assessed hazards and indicates for which of them the combination of likelihood and severity requires the implementation of adaptation measures, as presented in the following table. The risk scale is subsequently expressed in terms of significance levels for each risk score. The different levels of significance (negligible, low, moderate, significant, and very significant) are represented using a colour-coded scale, where green indicates negligible significance and red indicates the highest level of significance, corresponding to the greatest risk.

Table 10-15: Risk Scale

| CONSEQUENCE<br>SEVERITY OR<br>MAGNITUDE | LIKELIHOOD | RARE | UNLIKELY | MODERATE | LIKELY | ALMOST<br>CERTAIN |
|-----------------------------------------|------------|------|----------|----------|--------|-------------------|
|                                         |            | 1    | 2        | 3        | 4      | 5                 |
| INSIGNIFICANT                           | 1          | 1    | 2        | 3        | 4      | 5                 |
| MINOR                                   | 2          | 2    | 4        | 6        | 8      | 10                |
| MODERATE                                | 3          | 3    | 6        | 9        | 12     | 15                |
| MAJOR                                   | 4          | 4    | 8        | 12       | 16     | 20                |
| CATASTROPHIC                            | 5          | 5    | 10       | 15       | 20     | 25                |

Table 10-16: Qualitative description of climate risk scale



| RISK SCALE |               | DESCRIPTION                                                                                                   |
|------------|---------------|---------------------------------------------------------------------------------------------------------------|
| 1-3        | Insignificant | No risk mitigation measures required                                                                          |
| 4-6        | Low           | Need for risk mitigation measures (standard good practice measures) depends on project-specific circumstances |
| 7-10       | Medium        | Need for risk mitigation measures depends on project-specific circumstances                                   |
| 11-19      | High          | Risk mitigation measures are recommended                                                                      |
| 20-25      | Extreme       | Risk mitigation measures are required                                                                         |

The results of vulnerability analysis (Table 10-12) indicate that Medium or High levels of vulnerability may be identified for certain climate-related hazards. Consequently, a risk assessment is carried out for each of these hazards.

Table 10-17: Likelihood of Climate Related Hazards

| CLIMATE-RELATED HAZARDS                                      | LIKELIHOOD RATING |   | JUSTIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------------------------------|-------------------|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cyclones, severe storms, hurricanes                          | Rare              | 1 | Extreme cyclonic systems in the Mediterranean (Medicanes) are infrequent and do not exhibit a regular seasonal pattern in the Ionian offshore area. Historical climatological datasets indicate that such systems occur episodically, with limited recurrence over decadal timeframes. Therefore, while not impossible, their occurrence within the Project operational period is considered <b>rare</b> .                                                                                                                                                                                        |
| Tornadoes / Extreme winds                                    | Unlikely          | 2 | Tornado-type vortices in Greece are documented but remain highly localized, short-duration phenomena. Offshore occurrence is even less frequent than on land due to reduced convective triggering mechanisms over open water. Consequently, the probability of direct impact on offshore operations is assessed as <b>rare</b> .                                                                                                                                                                                                                                                                  |
| Flooding (coastal, fluvial, pluvial or groundwater flooding) | Moderate          | 3 | The Project onshore support base (Port of Igoumenitsa) is located within APSFR EL05APSFR008 (Kalamas river downstream and coastal zone system). Flood hazard mapping confirms exposure to riverine and coastal flooding under multiple return periods (T=50, T=100, T=1000 years), as well as pluvial flooding under intense rainfall events. Increases in extreme precipitation trends in western Greece are observed, therefore the probability of flooding affecting operational areas during the Project lifetime is conservatively assessed as <b>moderate</b> for risk assessment purposes. |
| Changes in wind characteristics                              | Likely            | 4 | Climate projections for the Mediterranean indicate potential changes in wind regimes, including alterations in storm track variability, seasonal wind distribution and increased frequency of short-duration high-wind events. Given the short duration of the drilling campaign, the <b>likely</b> rating conservatively reflects exposure to hazardous wind conditions during the operational period rather than longer-term changes in the regional wind regime.                                                                                                                               |
| Sea level rise                                               | Rare              | 1 | Sea level rise is a climatic trend confirmed by regional Mediterranean observations and projections. For the 67-day drilling campaign, sea level rise is considered a long-term climatic trend with no measurable variation over the project duration. Consequently, exposure to this hazard during the operational timeframe is assessed as <b>rare</b> .                                                                                                                                                                                                                                        |

Table 10-18: Severity of Climate Related Hazards

| CLIMATE-RELATED HAZARDS                                      | SEVERITY RATING |   | JUSTIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------------------------------|-----------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cyclones, severe storms, hurricanes                          | Major           | 4 | Should such an event occur, offshore drilling operations using a MODU and support vessels would be exposed to significant operational disruption, including suspension of activities, relocation of vessels, and potential risk to marine operations. However, due to standard offshore safety protocols, forecasting systems, and emergency disconnect procedures, impacts are expected to remain within controlled operational disruption rather than catastrophic failure, thus classified as <b>major</b> . |
| Tornadoes / Extreme winds                                    | Moderate        | 3 | Extreme wind events can temporarily exceed operational thresholds for lifting, drilling, and vessel transfer operations, leading to suspension of activities and potential safety risks during marine operations. However, the presence of strict operational wind limits, dynamic positioning systems, and shutdown procedures limits escalation, resulting in <b>moderate</b> consequences.                                                                                                                   |
| Flooding (coastal, fluvial, pluvial or groundwater flooding) | Major           | 4 | Flooding could result in direct inundation of logistics areas, temporary shutdown of port operations, damage to equipment and materials, disruption of supply chain continuity, and restricted access to offshore support infrastructure. Due to the concentration of critical logistics at a single coastal hub, consequences are assessed as <b>major</b> , reflecting potential multi-day to multi-week operational disruption.                                                                              |
| Changes in wind characteristics                              | Moderate        | 3 | Changes in wind characteristics primarily affect operational planning, vessel routing, and weather windows for offshore activities. While they may reduce operational efficiency and increase standby time, they do not generally result in structural damage due to operational limits and marine safety procedures. Therefore, consequences are classified as <b>moderate</b> operational impact rather than safety-critical failure.                                                                         |
| Sea level rise                                               | Minor           | 2 | For the Project, impacts are primarily associated with the onshore logistics base and port infrastructure through potential changes in baseline flood levels, increased storm surge amplification, and drainage capacity exceedance. However, due to the temporary nature of drilling activities and existing port adaptation capacity, consequences are assessed as <b>minor</b> , particularly within the Project timeframe.                                                                                  |

Table 10-19: Climate risk assessment for the Project

| CLIMATE-RELATED HAZARDS                                      | VULNERABILITY | LIKELIHOOD |   | CONSEQUENCE SEVERITY OR MAGNITUDE |   | RISK ASSESSMENT |               |
|--------------------------------------------------------------|---------------|------------|---|-----------------------------------|---|-----------------|---------------|
| Cyclones, severe storms, hurricanes                          | Medium        | Rare       | 1 | Major                             | 4 | 4               | Low           |
| Tornadoes / Extreme winds                                    | Medium        | Unlikely   | 2 | Moderate                          | 3 | 6               | Low           |
| Flooding (coastal, fluvial, pluvial or groundwater flooding) | High          | Moderate   | 3 | Major                             | 4 | 12              | High          |
| Changes in wind characteristics                              | High          | Likely     | 4 | Moderate                          | 3 | 12              | High          |
| Sea level rise                                               | Medium        | Rare       | 1 | Minor                             | 2 | 2               | Insignificant |

### 10.1.2.3.3 Measures to enhance climate change adaptation - residual risk

For the purposes of climate vulnerability risk assessment, adaptation and mitigation measures are considered for climate-related hazards assessed as having at least a medium level of risk. This approach focuses on hazards that may result in non-negligible residual risk if no additional measures are implemented. Consequently, hazards assessed as Low risk are not further developed within the risk management framework, as the associated risks are considered sufficiently addressed through the inherent resilience of the Project design and standard good engineering practice. The objective of this stage is to ensure that, for all relevant medium and high climate-related risks, appropriate adaptation measures are identified and integrated where necessary, to achieve the greatest possible reduction of residual risk across the Project lifecycle.

With regard to flooding risk (coastal, fluvial, pluvial, or groundwater flooding), the onshore logistics base is located within the APSFR EL05APSFR008 (Kalamas river delta and coastal zone of Igoumenitsa). The Project is potentially exposed to riverine, coastal, and pluvial flooding under both current and future climate conditions. Adaptation is therefore focused on reducing exposure of critical assets and ensuring operational continuity under extreme events. Key measures include the following:

- Elevation of sensitive equipment, electrical installations, and hazardous materials above the relevant design flood levels, including consideration of extreme return periods where appropriate.
- Site layout is optimised to avoid, where practicable, areas identified as high flood hazard within the mapped flood risk zones.
- Temporary Project facilities, equipment and hazardous materials will, where practicable, be located or secured with due regard to mapped flood-risk areas and applicable port requirements.
- Project logistics arrangements will consider available flood warnings, access restrictions and temporary disruption at the existing port facilities.
- Ground-level structures are designed using flood-resilient materials and construction techniques to minimise damage in the event of inundation, while modular or raised platforms are adopted for particularly sensitive operational components.
- A robust surface water management system is implemented, designed to accommodate intense precipitation events with appropriate climate change allowances. This includes appropriately sized drainage infrastructure, regular maintenance to prevent blockage, and the incorporation of attenuation or temporary storage capacity where necessary to reduce peak runoff. Measures to prevent backflow from coastal or fluvial sources, such as non-return valves or passive flood protection elements, are also integrated where relevant.
- From an operational perspective, flood resilience is further reinforced through emergency preparedness procedures, including early warning systems, defined shutdown and evacuation protocols, and the ability to rapidly secure or relocate mobile equipment and materials in advance of extreme weather events.
- The logistics system is designed with redundancy where feasible, ensuring alternative access routes in the event of temporary flooding-related disruption.

The Project area, particularly offshore operations, is subject to variable wind regimes, which may become more pronounced under future climate conditions, including changes in average wind patterns and an increased frequency of extreme wind events. Adaptation in this context is primarily operational and safety-

driven, focusing on maintaining safe working conditions and minimising downtime rather than permanent structural modification.

- Offshore operations are therefore governed by clearly defined wind operational limits, which determine safe thresholds for lifting operations, vessel transfers, and dynamic positioning activities. These thresholds are supported by real-time meteorological forecasting and decision-support systems, allowing proactive planning and avoidance of adverse conditions.
- The MODU and associated marine vessels are designed and operated in accordance with applicable international offshore standards, ensuring adequate structural resilience to extreme wind loads and maintaining safety margins for equipment securing and deck operations.
- Operational continuity is further enhanced through flexible scheduling of marine and helicopter transfers, allowing activities to be adjusted in response to changing wind conditions.
- Where necessary, contingency arrangements are in place to temporarily suspend operations during periods of unsafe meteorological conditions, with minimal disruption to overall drilling campaign progression.

Collectively, these measures ensure that wind-related climate variability is effectively managed through a combination of engineering standards, operational controls, and forecasting capability, rather than reliance on fixed structural adaptation.

Proposed measures to achieve additional adaptation and increased resilience to climate change are listed in Table 10-20 and the residual risk is reassessed.

**Table 10-20: Climate Change Adaptation Measures and Residual Risk for the Project**

| CLIMATE-RELATED HAZARDS                                      | RISK ASSESSMENT |      | CLIMATE CHANGE ADAPTATION MEASURES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | RESIDUAL RISK |   |
|--------------------------------------------------------------|-----------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---|
| Flooding (coastal, fluvial, pluvial or groundwater flooding) | 12              | High | <p>Design and infrastructure measures</p> <ul style="list-style-type: none"> <li>• Position critical equipment, electrical systems, and hazardous materials above design flood levels.</li> <li>• Ensure that site layout avoids or minimises occupation of mapped high-risk flood zones where feasible.</li> <li>• Use flood-resilient construction materials for ground-level structures (water-resistant finishes, reinforced foundations).</li> <li>• Install raised platforms or modular units for sensitive operational facilities.</li> </ul> <p>Drainage and water management</p> <ul style="list-style-type: none"> <li>• Oversee within the designated Project areas the regular maintenance and clearing of drainage channels to prevent blockage, where applicable.</li> </ul> <p>Operational and emergency preparedness</p> <ul style="list-style-type: none"> <li>• Address flood-related disruption through applicable Project emergency and logistics contingency arrangements, including coordination with relevant facility operators, consideration of available early warning procedures and evacuation protocols.</li> <li>• Identify practicable logistics contingencies, where available, to maintain access during flood events.</li> </ul> | Low           | 6 |

| CLIMATE-RELATED HAZARDS         | RISK ASSESSMENT |      | CLIMATE CHANGE ADAPTATION MEASURES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | RESIDUAL RISK |   |
|---------------------------------|-----------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---|
|                                 |                 |      | <ul style="list-style-type: none"> <li>Establish protocols for rapid relocation or securing of mobile equipment and hazardous materials in advance of extreme weather warnings.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |   |
| Changes in wind characteristics | 12              | High | <p>Operational design and marine safety measures</p> <ul style="list-style-type: none"> <li>Apply operational limits (wind thresholds) for MODU operations, lifting activities, and vessel transfers.</li> <li>Use real-time meteorological forecasting systems integrated with offshore decision support tools.</li> <li>Ensure that all marine operations follow weather downtime planning procedures to avoid exposure during high wind conditions.</li> </ul> <p>Structural and equipment resilience</p> <ul style="list-style-type: none"> <li>Ensure that MODU and offshore support vessels comply with relevant IMO and class society extreme wind design standards.</li> <li>Secure all deck equipment using storm securing arrangements designed for extreme wind events.</li> <li>Design lifting and crane operations with wind load safety margins consistent with offshore engineering standards.</li> </ul> <p>Logistics and operational continuity</p> <ul style="list-style-type: none"> <li>Maintain flexible scheduling of offshore transfers and helicopter operations to accommodate wind variability.</li> <li>Identify practicable logistics contingency arrangements to manage potential disruption due to wind-induced port or offshore access constraints.</li> <li>Ensure contingency planning for temporary suspension of operations during extreme wind events.</li> </ul> | Low           | 6 |

Based on the results of the above analysis, with the adoption of the applicable adaptation measures, the maximum possible reduction of the residual risk is achieved, and the entirety of the significant inherent risks becomes fully controllable and manageable. However, relevant weather forecasts and warnings will be monitored throughout the drilling campaign, and operational controls will be adjusted where necessary through established Project and contractor procedures.

### 10.1.3 Impacts on morphological and topological characteristics

#### 10.1.3.1 Morphology

According to the baseline geohazards assessment of the ESBS (Annex 02), the surveyed area around the proposed Asopus-1 well is characterised by rough seafloor and complex morphology associated with exposed mass transport deposit (MTD) material. The planned well location lies within a low-reflectivity groove covered by fine sediments, with a gentle seabed gradient of approximately 1.3°. No fault scarp morphologies, active seabed deformation or evidence of remobilisation of the underlying MTD unit have been identified within the 500 m radius area.

### 10.1.3.1.1 Drilling preparation and mobilisation phase

During the mobilisation phase, no drilling operations are undertaken and therefore no discharge of drilling fluids, cuttings, cement, or any other materials to the marine environment occurs. The only offshore mobilisation activities consist of the transit and positioning of the MODU and its associated support vessels at the drilling location. These activities are entirely navigational and do not involve any direct interaction with the seabed. The MODU will be positioned using dynamic positioning systems rather than anchoring, meaning that there is no physical seabed contact or mechanical disturbance of sediments.

As a result, there is no pathway for the mobilisation phase to induce morphological change. Vessel movements may generate short-lived hydrodynamic disturbances in the water column; however, these are fully transient and dissipate rapidly without influencing seabed structure or sediment stability. No erosion, scour development, sediment redistribution, or alteration of seabed micro-topography is expected. Consequently, offshore morphological impacts during mobilisation are considered negligible.

Onshore mobilisation activities are restricted to the use of the existing Port of Igoumenitsa as a logistics base for loading, staging, and dispatch of equipment and personnel. These activities take place entirely within an already industrialised and permanently modified coastal environment. No construction works, dredging, shoreline reinforcement, land reclamation, or excavation activities are required in support of the Project.

Because the port area is structurally fixed and geomorphologically inactive in natural terms, Project activities do not interact with active sediment transport systems or coastal erosion processes. Accordingly, there is no influence on coastal morphology, shoreline configuration, or terrestrial landform stability. Utility connection works may involve minor and localised ground disturbance within existing port infrastructure in the highly modified port environment. Considering also the relatively limited scale of works, no significant impacts on terrestrial morphology are anticipated, and any effects will be temporary and fully reversible.

In summary, with regard to their significance, the impacts on morphology during the mobilisation phase are assessed as negative (-), with negligible intensity (IN = 1), localised spatial extent (EX = 1), occurring immediately during mobilisation activities (MO = 4), coincident with the mobilisation period (PE = 1), short-term and fully reversible (RV = 1), with low synergistic interaction effects (SI = 1), with direct effect (EF = 4), discontinuous in nature (PR = 1), characterised by short-term recovery potential (MC = 2), and non-cumulative (AC = 1). In terms of their overall significance, these impacts are assessed as **negligible**.

| Impacts on morphology            |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |
|----------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|
| Project Activities / Elements    | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment |
| Onshore utility connection works | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20 Negligible         | Medium                     |
|                                  |            |                |             |             |                  |                    |              |             |                  |               |                   |                       | NEGLIGIBLE                 |

### 10.1.3.1.2 Exploration drilling operations phase

Limited morphological interaction with the marine environment may occur during drilling, primarily as a consequence of controlled operational discharges. These include the discharge of water-based drilling muds and drill cuttings during both riserless and riser drilling sections, cement residues associated with casing



operations, minor bulk material losses such as barite and cement fines, and small volumes of water-soluble BOP hydraulic fluids.

In particular, the riserless section involves seabed-level discharge of drilling cuttings and water-based muds. During this phase, approximately several hundred tonnes of cuttings and drilling fluids may be released directly at or near the seabed. Once the marine riser is installed, subsequent discharges occur at approximately 12 m below sea level, allowing partial dilution within the water column before sedimentation. Although the total mass of discharged material over the drilling campaign is not negligible, the physical nature of the materials is predominantly fine-grained, unconsolidated and low-toxicity, consisting largely of seawater, clay minerals, carbonate particles, barite (if used since it is a contingency chemical) and biodegradable additives selected and discharged in accordance with applicable chemical approval and discharge requirements.

From a morphological perspective, these discharges do not result in permanent seabed modification. Instead, they may give rise to a localised, low-relief depositional footprint around the well location, typically expressed as a thin layer of redistributed sediments and cuttings. This represents a physical alteration of surface sediment characteristics rather than a modification of seabed landform or marine geomorphological processes.

Cuttings dispersion modelling (Annex 07) undertaken for the Asopus-1 exploration well supports this assessment. Deterministic simulations were run for two representative seasonal scenarios: Season 1, corresponding to the most frequent current conditions during October to March, and Season 2, corresponding to higher-intensity current conditions during April to September. The modelling identified grain-size change as the primary contributor to sediment-related risk, followed by effective depositional thickness. Sediment screening-threshold exceedance was predicted to extend up to approximately 283 m to the south-west under Season 1 conditions and up to approximately 397 m under Season 2 conditions. The modelling represents a conservative design-envelope case in which all modelled primary and contingency chemicals are assumed to be used at their maximum stated concentrations and is therefore not representative of the expected operational chemical-use profile. After 10 years of model run on a conservative scenario where all the primary and contingency chemicals are used to the maximum stated concentrations, the maximum affected distance was predicted to reduce to approximately 213 m and 287 m, respectively. In both scenarios, the maximum modelled seabed area exceeding the screening threshold was estimated at approximately 2.75 ha.

These modelling results indicate that the morphological effect of drilling discharges will remain confined to the vicinity of the well location and will be driven mainly by physical sediment change rather than chemical toxicity. The modelled risks are localised in the discharge area, while water-column risks are predicted to cease within a few days after the end of discharges. The footprint is therefore spatially limited and does not indicate a potential for large-scale seabed modification or wider marine geomorphological change.

Hydrodynamic conditions at the drilling location will further contribute to the dispersion and redistribution of discharged material. Bottom currents and episodic marine processes may promote resuspension and reworking of fine sediments, preventing long-term consolidation of deposits. As a result, any seabed modification is expected to be temporary to medium-term in nature and subject to natural sedimentary rebalancing processes.



Cement discharges are generally of lower morphological relevance, as most cement is retained within the wellbore annulus, with only limited excess volumes potentially reaching the seabed. These materials are not expected to form persistent geomorphological structures. Similarly, BOP hydraulic fluid releases are water-soluble and occur in small volumes, with no capacity to influence seabed morphology.

Importantly, no seabed excavation, trenching, anchoring systems, subsea infrastructure or cuttings piling infrastructure is associated with the Project. Therefore, there will be no permanent alteration of seabed form, slope configuration or marine geomorphological structure. The morphological effect is strictly confined to temporary sediment redistribution and localised deposition within the operational footprint.

With regard to drilling contingency activities, potential impacts on morphology would be limited to the seabed in the immediate vicinity of the well location and any replacement or sidetrack location within the surveyed area. Re-spudding may require repetition of early well construction activities, particularly riserless drilling, resulting in additional cuttings and cement deposition on the seabed. Sidetracking may also increase the volume of cuttings and drilling residues, although generally to a lesser extent than a full re-spud. An Emergency Disconnect Sequence could result in the localised discharge of riser contents (drilling fluids and cuttings) at the seabed. Contingent cementing could also generate additional cement residues if excess cement or washout material is discharged. These effects may locally alter seabed surface characteristics through deposition, smothering or minor sediment displacement. However, they would not alter regional seabed morphology or coastal geomorphological conditions.

Onshore support operations at the Port of Igoumenitsa include equipment handling, logistics, storage, and vehicle movements within existing port infrastructure. These activities do not involve any excavation, ground preparation, or modification of coastal structures. All operational surfaces are already paved or industrially developed, meaning that no interaction with natural geomorphological processes occurs.

Furthermore, there is no requirement for dredging, shoreline stabilization works, or expansion of port facilities to accommodate the project. Consequently, there is no mechanism through which the drilling phase could influence coastal erosion patterns, sediment transport dynamics, or terrestrial landform evolution. Onshore morphological impacts during drilling are therefore negligible.

In summary, with regard to their significance, the impacts on morphology during the drilling operations phase are assessed as negative (-), of negligible to low intensity (IN=1-2), localised to the well area (EX=1-2), immediate (MO=4), temporary throughout the drilling period (PE=1), short-term and fully reversible following cessation of activities (RV=1), with no synergistic effects (SI=1), direct (EF=4), either continuous or occasional depending on the activity (PR=1-4), with short-term recovery after completion of drilling (MC=2), and non-cumulative (AC=1). Overall, these impacts are assessed as **minor**.

| Impacts on morphology                           |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|-------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                   | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| MODU drilling, wellhead and casing installation | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Medium                     | NEGLECTIBLE         |
| Discharge of water-based fluids and             | -          | 2              | 2           | 4           | 1                | 1                  | 1            | 4           | 4                | 2             | 1                 | 28                    | Low        | Medium                     | MINOR               |

| Impacts on morphology                   |   |   |   |   |   |   |   |   |   |   |   |    |     |        |       |
|-----------------------------------------|---|---|---|---|---|---|---|---|---|---|---|----|-----|--------|-------|
| cuttings to seabed (riserless drilling) |   |   |   |   |   |   |   |   |   |   |   |    |     |        |       |
| Drilling contingency activities         | - | 2 | 1 | 4 | 1 | 1 | 1 | 4 | 1 | 2 | 1 | 23 | Low | Medium | MINOR |

### 10.1.3.1.3 Demobilisation and abandonment phase

During demobilisation and well abandonment activities, offshore morphological impacts remain limited to residual and secondary effects associated with the cessation of drilling operations and the execution of well plug and abandonment (P&A) procedures. These may include additional volumes of water-based mud displacement, minor cement residues, and small-scale sediment disturbance associated with operational clean-up activities.

During the well plug and abandonment phase, cement plugs are installed within the wellbore to provide permanent isolation of geological formations and ensure long-term well integrity. These activities are undertaken entirely within the drilled well and do not require excavation, dredging, trenching, or any other direct modification of the seabed. Consequently, the installation of cement plugs itself does not result in any significant alteration of seabed morphology.

In line with industry practices for deepwater drilling, the wellhead will be left in place. Retention of the wellhead does not alter the abandonment status of the well. The well will be rendered non flowing and environmentally secure, with no connection to the reservoir, with permanent well barriers installed and verified in accordance with the approved abandonment programme and applicable regulatory requirements. All temporary subsea infrastructure (including the BOP, marine riser, and transponders) will be removed, and no production facilities, pipelines, control umbilical, or surface installations will be installed. Based on the current design, the permanent physical footprint on the seabed associated with the exploration activity is expected to be less than 1 m<sup>2</sup>. The physical seabed footprint of a retained wellhead is small and does not require routine inspection, operations, or support activities. Retaining the wellhead avoids additional seabed disturbance and vessel activity that would otherwise be required for immediate removal followed by potential future re-entry, if subsequently required and authorised, and is therefore considered a proportionate measure.

Limited discharges of residual cement slurry and water-based drilling fluids may occur during well abandonment operations, primarily during cementing clean-up, well displacement, and circulation activities. These discharges may lead to minor and highly localized deposition of fine materials on the seabed in the immediate vicinity of the well site. However, the volumes involved are relatively small compared with natural sediment transport processes in the deep offshore environment, and the discharged materials are expected to disperse and become incorporated into the surrounding sediments over time.

Demobilisation activities do not introduce new physical interventions to the seabed beyond those already experienced during drilling. Instead, they primarily interact with previously disturbed sediments within the existing operational footprint. Any additional sediment resuspension or redistribution is therefore a continuation of earlier processes rather than the creation of new morphological change.

The absence of permanent seabed infrastructure ensures that no residual geomorphological features of engineering significance, such as foundations or cuttings piles, remain after completion of the project. Natural sediment transport processes will continue to act on the seabed, progressively re-establishing equilibrium conditions over time.

Onshore demobilisation activities consist of the removal, retention or asset transfer, as agreed with the Port operator, of temporary equipment and the reinstatement or other agreed handback of operational areas within the Port of Igoumenitsa. These actions occur entirely within an already modified industrial port environment and do not involve any physical alteration of landforms or coastal structures.

No demolition of permanent infrastructure, excavation of soil, or alteration of shoreline configuration is required. Therefore, there is no pathway for residual morphological impact. The port environment remains structurally unchanged following completion of activities, and no effects on coastal geomorphology or sedimentary processes are expected.

In summary, with regard to their significance, the impacts on morphology during the demobilisation phase are assessed as negative (-), with negligible intensity (IN = 1), localised spatial extent (EX = 1), occurring immediately during demobilisation activities (MO = 4), coincident with the mobilisation period (PE = 1), short-term and fully reversible (RV = 1), with low synergistic interaction effects (SI = 1), with direct effect (EF = 4), discontinuous in nature (PR = 1), characterised by short-term recovery potential (MC = 2), and non-cumulative (AC = 1). In terms of their overall significance, these impacts are assessed as **negligible**.

| Impacts on morphology                    |            |                |             |             |                  |                    |             |             |                  |               |                   |                       |            |                            |                     |
|------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|-------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements            | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synerg (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| Cement plug installation and abandonment | -          | 1              | 1           | 4           | 1                | 1                  | 1           | 4           | 1                | 2             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          |

### 10.1.3.2 Landscape

#### 10.1.3.2.1 Drilling preparation and mobilisation phase

During the mobilisation phase, visual impacts will arise from the transit and positioning of the MODU, support vessels and helicopters associated with the Project. However, the drilling location is situated approximately 44 km offshore, well beyond the visual horizon from the mainland coastline under normal atmospheric conditions. Consequently, the MODU and associated vessels are not expected to be visible from coastal receptors, including settlements, tourist areas or recreational viewpoints along the Epirus coastline.

Temporary visual effects may occur within the Port of Igoumenitsa during mobilisation activities associated with the establishment of the shore base. These activities include the arrival of equipment, temporary storage units, cargo handling equipment and increased vessel movements within the existing port area. These activities take place entirely within an established commercial port characterised by intensive industrial and transport activities. The introduction of temporary project-related equipment will not substantially alter the existing landscape character.

In summary, with regard to their significance, the impacts on landscape during the mobilisation phase are assessed as negative (-), with negligible intensity (IN = 1), localised spatial extent (EX = 1), occurring immediately during mobilisation activities (MO = 4), coincident with the mobilisation period (PE = 1), short-term and fully reversible (RV = 1), with low synergistic interaction effects (SI = 1), with direct effect (EF = 4), discontinuous in nature (PR = 1), characterised by short-term recovery potential (MC = 2), and non-cumulative (AC = 1). In terms of their overall significance, these impacts are assessed as **negligible**.

| Impacts on landscape                                                                                                            |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|---------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                                                                                                   | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| Installation of wharf crane (if applicable), utility connections, prefabricated office units, welfare and sanitation facilities | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Medium                     | NEGLECTIBLE         |

### 10.1.3.2.2 Exploration drilling operations phase

During drilling operations, the principal offshore visual element will be the presence of the MODU and associated support vessels at the well location for approximately 67 days. The MODU is a large industrial structure and will be illuminated during night-time operations for safety and operational reasons.

Nevertheless, due to the substantial distance from the coast (>44 km), the MODU is not expected to be visible from onshore receptors under normal conditions. Consequently, no significant effects on coastal landscape character, scenic quality, tourism resources or designated landscape areas are anticipated.

The operation of helicopters between the shore base and the MODU may generate occasional visual disturbance. However, helicopter movements will be intermittent, short in duration and limited to established aviation routes. These flights are not expected to result in significant visual intrusion, considering the existing transport and port-related activities in the area.

Visual impacts associated with shore base operations will include the temporary presence of containers, equipment, waste skips, parked vehicles and cargo handling activities within the Port of Igoumenitsa. As the Project will utilise existing port facilities and no permanent infrastructure will be constructed, the overall appearance and landscape character of the port area will remain unchanged.

The Port of Igoumenitsa constitutes a highly modified urban-industrial landscape where shipping, cargo handling and logistics activities already form dominant visual components. The temporary increase in operational activity associated with the Project is therefore considered compatible with the existing landscape character and visual baseline.

In summary, with regard to their significance, the impacts expected on landscape during the drilling operations phase are assessed as negative (-), of negligible intensity (IN=1), limited to the offshore operational area (EX=2), immediate (MO=4), temporary throughout the drilling period (PE=1), short-term reversible following cessation of activities (RV=1), non-synergistic (SI=1), direct (EF=4), continuous during

operations (PR=4), restored immediately after completion of drilling (MC=1), and non-cumulative (AC=1). Overall, these impacts are assessed as **negligible**.

| Impacts on Landscape                                           |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |     |                            |                     |
|----------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|-----|----------------------------|---------------------|
| Project Activities / Elements                                  | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |     | Valued Receptor Assessment | Impact Significance |
| MODU safety exclusion zone and support/supply vessel transfers | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 21                    | Low | Low                        | NEGLECTIBLE         |

### 10.1.3.2.3 Demobilisation and abandonment phase

Demobilisation activities involve the departure of the MODU, support vessels and associated marine assets from the drilling location following completion of drilling and well abandonment operations. These activities do not introduce additional visual elements beyond those already present during the operational phase and are of short duration.

Following completion of demobilisation, no permanent offshore infrastructure will remain at the well location, other than the retained wellhead, which will be located on the seabed and will not affect visual conditions. The removal of the MODU and associated vessels will restore baseline visual conditions.

Demobilisation of the temporary shore base will involve the removal of containers, equipment, temporary storage areas and ancillary facilities from the Port of Igoumenitsa. Since no permanent structures will have been constructed, the port area will revert to its pre-project condition immediately following completion of activities. For the Port of Igoumenitsa, this positive effect would be associated with the removal of temporary containers, storage areas and equipment and the cessation of increased logistics activities and vehicle movements. Overall, the demobilisation and abandonment phase can be considered to generate a minor positive impact on landscape and visual amenity, because all temporary Project infrastructure and activities cease and baseline conditions are restored.

In summary, with regard to their significance, any negative (-) visual impacts during demobilization will be of negligible intensity (IN = 1), localised spatial extent (EX = 1), occurring immediately during demobilisation activities (MO = 4), coincident with the mobilisation period (PE = 1), short-term and fully reversible (RV = 1), with low synergistic interaction effects (SI = 1), with direct effect (EF = 4), discontinuous in nature (PR = 1), characterised by short-term recovery potential (MC = 2), and non-cumulative (AC = 1). In terms of their overall significance, these impacts are assessed as **negligible**.

| Impacts on landscape                       |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|--------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements              | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| Removal of temporary subsea infrastructure | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Medium                     | NEGLECTIBLE         |

| Impacts on landscape                       |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |     |                            |                     |
|--------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|-----|----------------------------|---------------------|
| Project Activities / Elements              | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |     | Valued Receptor Assessment | Impact Significance |
| Dismantling and removal from the port area | +          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 4                | 2             | 1                 | 26                    | Low | Low                        | POSITIVE            |
| Removal of helicopter hangar               | +          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 4                | 2             | 1                 | 26                    | Low | Low                        | POSITIVE            |

## 10.1.4 Impacts on geological, tectonic, and soil characteristics

### 10.1.4.1 Geology / marine geology

#### 10.1.4.1.1 Drilling preparation and mobilisation phase

During the drilling preparation and mobilisation phase, no significant impacts on geology or marine geology are expected. Offshore activities will be limited to the transit and positioning of the MODU and support vessels at the well location. As the drillship will operate using dynamic positioning and no anchoring is planned, there will be no direct physical disturbance of seabed sediments, sub-seabed formations or marine geological structures during mobilisation.

Onshore mobilisation activities will be confined to existing paved areas within the Port of Igoumenitsa and Corfu airport facilities. No land take, excavation, quarrying, dredging, reclamation or modification of natural geological formations is required. Any temporary installation of offices, welfare units, storage areas or utility connections will be undertaken within already modified operational areas and will not affect geological conditions.

In summary, with regard to their significance, the impacts on geology / marine geology during the mobilisation phase are assessed as negative (-), with negligible intensity (IN = 1), localised spatial extent (EX = 1), occurring immediately during mobilisation activities (MO = 4), coincident with the mobilisation period (PE = 1), short-term and fully reversible (RV = 1), with low synergistic interaction effects (SI = 1), with direct effect (EF = 4), discontinuous in nature (PR = 1), characterised by short-term recovery potential (MC = 2), and non-cumulative (AC = 1). In terms of their overall significance, these impacts are assessed as **negligible**.

| Impacts on geology / marine geology |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|-------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements       | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
|                                     |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
| Onshore utility connection works    | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Medium                     | NEGLECTIBLE         |



#### 10.1.4.1.2 Exploration Drilling Operations Phase

During the offshore exploration drilling phase, the Project will interact directly with the geological environment below the seabed, through the drilling of the Asopus-1 exploration well. This interaction will involve the mechanical penetration of geological formations, removal of drilled material as cuttings, installation of casing strings, cementing and formation evaluation activities. These effects will be confined to the wellbore and its immediate surroundings and will not result in any measurable alteration of regional geological, tectonic or marine geological conditions.

The drilling activity will create a borehole through the subsurface formations. The Asopus 1 exploration well will be drilled using established offshore exploration drilling practices, progressing sequentially from shallow seabed sections to the planned final depth. Well construction will be carried out in accordance with the HEREMA accepted Notification of Well Operations (NoWO), maintaining well control and integrity throughout the operation. The operations include riserless drilling of shallow top hole sections, during which water-based drilling fluids and rock cuttings are discharged at the seabed, and riser based drilling, following installation of the marine riser and blowout preventer (BOP), during which drilling returns are routed to the drillship.

Cuttings generated during drilling will represent the physical removal of a small volume of geological material relative to the scale of the surrounding formations. The effect is therefore highly localised and limited to the well path.

Marine geological effects at the seabed will be mainly associated with the top-hole sections, riserless drilling activities, placement of the wellhead and BOP system, and the controlled discharge of water-based drilling fluids and cuttings. These activities may result in a localised depositional footprint of cuttings and fine mineral material around the well centre. However, the materials are expected to consist primarily of naturally occurring geological formations and water-based drilling fluids, and the resulting seabed interaction will be limited in area and thickness.

The Project does not involve hydrocarbon production, reservoir depletion, underground storage, large-scale fluid injection or extraction activities that could affect regional geomechanical conditions or induce seismicity.

No dredging, trenching, seabed levelling, anchoring system, pipeline installation or permanent offshore production infrastructure is proposed. Therefore, impacts on marine geology will not involve large-scale seabed excavation or permanent modification of the seabed geological environment. Cementing operations will be limited to well construction and zonal isolation, with cement retained primarily within the wellbore and annular spaces. Any minor seabed interaction from excess cement or drilling-related material will remain localised to the well area.

The well design, casing programme, cementing strategy and well control procedures will be implemented to maintain wellbore stability and prevent uncontrolled interaction between geological formations. These measures will be designed and implemented to manage the risk of formation instability, cross-flow or unintended subsurface migration of fluids.

In summary, with regard to their significance, the impacts on geology / marine geology during the drilling operations phase are assessed as negative (-), of negligible to low intensity (IN=1-2), localised to the well area (EX=1), immediate (MO=4), temporary or permanent throughout the drilling period, depending on the activity (PE = 1 - 4), irreversible as the well will be left in place (RV= 1 - 4), with no synergistic effects (SI=1),



direct (EF=4), irregular (PR=1), with short-term recovery after completion of drilling (MC=2), and non-cumulative (AC=1). Overall, these impacts are assessed as **minor**.

| Impacts on geology / marine geology                                                 |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|-------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                                                       | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| MODU drilling, wellhead and casing installation                                     | -          | 2              | 1           | 4           | 4                | 4                  | 1            | 4           | 1                | 2             | 1                 | 29                    | Low        | Medium                     | MINOR               |
| Discharge of water-based fluids and cuttings to seabed (riserless drilling)         | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          |
| Discharge of water-based fluids and cuttings near sea surface (drilling with riser) | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          |
| Cement discharges at seabed                                                         | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          |

#### 10.1.4.1.3 Demobilisation and abandonment phase

During the demobilisation and abandonment phase, potential impacts on geology and marine geology will be associated mainly with plug and abandonment activities, cement plug installation, circulation and displacement of well fluids, ROV inspections and final departure of the MODU and support vessels. These activities will be undertaken within the already drilled well and will not create new geological disturbance beyond the existing wellbore.

Cement plugs and other permanent well barriers will be installed to isolate geological formations and ensure long-term well integrity. This represents a controlled engineering measure intended to stabilise and secure the well rather than an adverse geological impact. The abandonment programme will be designed to prevent fluid movement between formations and between the subsurface and seabed, thereby protecting the marine geological environment from future uncontrolled pathways.

As the wellhead will be left in place, no wellhead cutting or seabed excavation associated with wellhead removal will be undertaken. Therefore, no additional seabed disturbance from cutting, sediment resuspension or removal of seabed equipment is expected. ROV post-operation surveys will be observational and will not materially disturb seabed sediments or geological features.

Following completion of plug and abandonment and departure of the MODU, no further Project activities capable of affecting geology or marine geology will occur. The remaining subsurface infrastructure will be confined to the wellbore and designed to remain stable over the long term. Accordingly, impacts on geology and marine geology during demobilisation and abandonment are expected to be highly localised and controlled through standard well abandonment procedures.

In summary, with regard to their significance, the impacts on geology / marine geology during the demobilisation phase are assessed as negative (–), with negligible intensity (IN = 1), localised spatial extent (EX = 1), occurring immediately during demobilisation activities (MO = 4), coincident with the mobilisation period (PE = 1), short-term and fully reversible (RV = 1), with low synergistic interaction effects (SI = 1), with direct effect (EF = 4), discontinuous in nature (PR = 1), characterised by short-term recovery potential (MC = 2), and non-cumulative (AC = 1). In terms of their overall significance, these impacts are assessed as **negligible**.

| Impacts on geology / marine geology        |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|--------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements              | Nature (S) | Intensity (IN) | Extent (Ex) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| Cement plug installation and abandonment   | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          |
| Removal of temporary subsea infrastructure | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          |

#### 10.1.4.2 Slope stability

According to the baseline geohazards assessment of the ESBS (Annex 02), the well is located in approximately 842.5 m water depth on a gentle local slope of approximately 1.3°. Although harder mass transport deposit (MTD) sediment bodies within the 500 m radius area create localised steeper flanks where slope values may exceed 10°, the well location itself falls within a groove of fine sediments, and no evidence of active seabed deformation, fault scarps or remobilisation of the underlying MTD gravity unit has been identified.

Considering the regional spatial datasets and predictive models, the assessment of the Asopus-1 well location indicates a low susceptibility to gravitative mass movements. Based on the relatively gentle local slope gradients, it is expected that the probability of encountering submarine landslides or gravitative mass movements at the Asopus-1 well location is low.

##### 10.1.4.2.1 Drilling preparation and mobilisation phase

During the drilling preparation and mobilisation phase, no impacts on slope stability are expected. Offshore activities will be limited to the transit of the MODU and support vessels to the well location and the positioning of the drillship using dynamic positioning. No anchoring, seabed excavation, dredging, trenching, piling or placement of heavy permanent structures on the seabed will be undertaken during this phase. Therefore, there will be no physical mechanism capable of destabilising seabed sediments, submarine slopes or marine geological formations.

Any temporary utility connections required at the shore base will use existing infrastructure and are not expected to require excavation or modification of natural ground conditions. Installation of temporary utility connections at the shore base may involve minor surface-level works or shallow tie-ins to existing electricity and telecommunications networks within the Port of Igoumenitsa. Any activity will be undertaken within

existing paved port areas and will not require slope cutting, deep excavation, retaining structures or modification of natural ground conditions.

In summary, with regard to their significance, the impacts on slope stability during the mobilisation phase are assessed as negative (–), with negligible intensity (IN = 1), localised spatial extent (EX = 1), occurring immediately during mobilisation activities (MO = 4), coincident with the mobilisation period (PE = 1), short-term and fully reversible (RV = 1), with low synergistic interaction effects (SI = 1), with direct effect (EF = 4), discontinuous in nature (PR = 1), restored immediately (MC = 1), and non-cumulative (AC = 1). In terms of their overall significance, these impacts are assessed as **negligible**.

| Impacts on slope stability       |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |
|----------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|
| Project Activities / Elements    | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment |
| Onshore utility connection works | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20 Negligible         | Medium NEGLIGIBLE          |

#### 10.1.4.2.2 Exploration drilling operations phase

During the exploration drilling operations phase, potential interactions with slope stability are limited to the immediate well location and surrounding seabed. The main relevant activities are drilling of the well, installation of the wellhead and casing, operation of the BOP and riser system, and the discharge of water-based drilling fluids and cuttings, particularly during riserless drilling.

The Project will not involve seabed excavation, trenching, dredging, anchoring, pipeline installation or construction of permanent subsea infrastructure. The MODU will remain dynamically positioned and will not impose anchor loads on the seabed. Therefore, the Project is not expected to create significant mechanical disturbance or loading capable of affecting seabed slope stability.

The drilling of the well will penetrate subsurface geological formations, but the disturbance will be confined to the narrow wellbore. The Project does not involve production, reservoir depletion, large-scale fluid injection or underground storage, and therefore it is not expected to alter regional pore pressures, stress conditions or geomechanical stability in a manner that could affect submarine slope stability. Well design, casing installation, cementing and drilling fluid management will be implemented to maintain wellbore integrity and prevent instability within the drilled hole. These measures will reduce the potential for borehole collapse, uncontrolled formation interaction or localised instability around the well.

Riserless drilling may result in localised deposition of cuttings and water-based drilling fluids around the well centre. However, this material will form a limited depositional footprint and is not expected to create sufficient thickness, weight or lateral loading to trigger seabed instability or mass movement. Discharges during riser drilling will occur near the sea surface and will disperse through the water column, with any settled material expected to be thin and spatially limited.

In summary, with regard to their significance, the impacts on slope stability during the drilling operations phase are assessed as negative (–), of negligible to low intensity (IN = 1 – 2), localised to the well area (EX=1), immediate (MO=4), temporary (PE = 1), short-term (RV= 1), with no synergistic effects (SI=1), direct

(EF=4), irregular (PR=1), with short-term recovery after completion of drilling (MC = 1 – 2), and non-cumulative (AC=1). Overall, these impacts are assessed as **minor**.

| Impacts on slope stability                                                  |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |  |
|-----------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|--|
| Project Activities / Elements                                               | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |  |
| MODU drilling, wellhead and casing installation                             | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 23                    | Low        | Medium                     | MINOR               |  |
| Discharge of water-based fluids and cuttings to seabed (riserless drilling) | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | Medium                     | NEGLIGIBLE          |  |

#### 10.1.4.2.3 Demobilisation and abandonment phase

During the demobilisation and abandonment phase, potential interactions with slope stability will be limited to plug and abandonment activities within the existing wellbore. No new drilling, seabed excavation, dredging, trenching, anchoring or wellhead cutting will be undertaken.

Cement plug installation and abandonment activities will occur inside the already drilled wellbore and are intended to isolate geological formations and ensure long-term well integrity. These activities will not modify seabed gradients, disturb submarine slopes or create additional seabed loading. As the wellhead will be left in place, there will be no seabed disturbance associated with wellhead removal.

Following completion of abandonment and departure of the MODU and support vessels, no further Project activities capable of influencing slope stability will remain.

Onshore demobilisation activities will be confined to dismantling and removal of temporary facilities within existing port and airport areas. No ground excavation or modification of natural slopes is required.

In summary, with regard to their significance, the impacts on slope stability during the demobilisation phase are assessed as negative (-), with negligible intensity (IN = 1), localised spatial extent (EX = 1), occurring immediately during demobilisation activities (MO = 4), coincident with the mobilisation period (PE = 1), short-term and fully reversible (RV = 1), with low synergistic interaction effects (SI = 1), with direct effect (EF = 4), discontinuous in nature (PR = 1), characterised by short-term recovery potential (MC = 2), and non-cumulative (AC = 1). In terms of their overall significance, these impacts are assessed as **negligible**.

| Impacts on slope stability                 |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|--------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements              | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
|                                            | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          |
|                                            |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
| Removal of temporary subsea infrastructure | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          |

### 10.1.4.3 Tectonics and seismicity

The Asopus-1 exploration well is located within the southern part of the Adria Microplate, in the Apulian platform geological unit, within a broader Northern Ionian Sea region characterised by a complex tectonic history and influenced by the wider geodynamic setting of the Eastern Mediterranean. Regional tectonic processes are controlled by major structures including the Hellenic and Calabrian subduction zones, inherited normal faults, tectonic inversion structures and active seismogenic fault systems in the broader area. At the Project location, the local tectonic framework is characterised by a structurally faulted carbonate platform setting, with normal faults forming a horst-and-graben structural pattern and providing accommodation space for overlying sedimentary basins. However, the well will be located in a structurally relatively flat, fault-displaced carbonate platform environment and is separated from the active compressive subduction zones that bound the wider Ionian basin.

With regard to seismicity, the Project is located within the broader seismotectonic setting of the Ionian basin, which is influenced by the slow convergence of the African (Nubian) and Eurasian plates and by the counterclockwise rotation of the Ionian–Apulian microplate. The wider region of Western Greece and the Ionian Sea is seismically active, with frequent small to medium earthquakes and occasional strong events associated mainly with active fault systems along the Calabrian Arc and the Hellenic Trench. However, the well location lies on the structurally uplifted Apulian platform, away from the highest concentration of historical earthquake epicentres and active seismogenic faults located along the peripheral tectonic margins. As a result, the site is characterised by weak to moderate background seismicity.

#### 10.1.4.3.1 Drilling preparation and mobilisation phase

During the drilling preparation and mobilisation phase, no impacts on tectonics or seismicity are expected. Activities will be limited to logistics preparation, mobilisation of the MODU and support vessels, and transit and positioning at the well location. These activities do not involve subsurface penetration, reservoir intervention, seabed excavation, blasting, hydraulic stimulation, large-scale fluid injection, hydrocarbon production, reservoir depletion or underground storage.

Onshore mobilisation activities will be confined to existing paved areas within the Port of Igoumenitsa and Corfu airport facilities, and will not involve deep excavation, blasting, quarrying or other works capable of affecting tectonic or seismic conditions.

Accordingly, there is no credible mechanism through which mobilisation activities could modify tectonic structures, affect fault systems, alter regional stress conditions or induce seismic events. Therefore, the mobilisation phase has no credible impact pathway for tectonic conditions, and impacts are assessed as **negligible**.

#### 10.1.4.3.2 Exploration drilling operations phase

During the offshore exploration drilling phase, the Project will interact with the subsurface geological environment through the drilling of an exploration well, casing installation, cementing and formation evaluation. This interaction will be confined to the narrow wellbore and its immediate surroundings. It will not alter regional tectonic structures, fault systems or the broader geological stress regime of the Ionian Sea.

The Project does not include activities commonly associated with induced seismicity or modification of subsurface stress conditions. Drilling fluids will be used for borehole stability and well control. Consequently, the Project is not expected to trigger earthquakes, increase the frequency of seismic events, alter earthquake magnitude, or modify the natural seismic regime of the area.

The well design, mud programme, casing programme, cementing strategy and well control procedures will be implemented to maintain wellbore stability and isolate geological formations. These measures will control the interaction between the well and the surrounding formations and reduce the potential for uncontrolled formation communication or localised instability.

Although the wider Ionian region is tectonically active, tectonic setting is considered a baseline geohazard relevant to Project design, well integrity and operational safety, rather than an environmental receptor likely to be affected by the Project.

Onshore support activities during drilling will be limited to logistics, storage, utility use, waste handling and transport within existing port infrastructure, with no subsurface works or ground interventions capable of modifying tectonic structures or influencing seismicity.

In summary, with regard to their significance, the impacts on tectonics and seismicity during the drilling operations phase are assessed as negative (–), of negligible intensity (IN = 1), localised to the well area (EX=1), immediate (MO=4), temporary (PE = 1), short-term (RV= 1), with no synergistic effects (SI=1), direct (EF=4), irregular (PR=1), with immediate recovery after completion of drilling (MC = 1), and non-cumulative (AC=1). Overall, these impacts are assessed as **negligible**.

| Impacts on tectonics and seismicity             |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |
|-------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|
| Project Activities / Elements                   | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment |
| MODU drilling, wellhead and casing installation | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19 Negligible         | Medium NEGLIGIBLE          |

#### 10.1.4.3.3 Demobilisation and abandonment phase

During the offshore demobilisation and abandonment phase, interactions with the subsurface will be limited to plug and abandonment activities within the already drilled wellbore. Cement plugs and permanent barriers will be installed to isolate geological formations and secure long-term well integrity. These activities are controlled engineering measures and do not involve any intervention capable of affecting tectonic structures, faults or regional stress conditions.

As the wellhead will be left in place, no wellhead cutting or additional seabed disturbance associated with wellhead removal is expected. Following completion of plug and abandonment, the well will remain isolated by permanent barriers and no further Project activities capable of affecting tectonic conditions will remain.

Onshore demobilisation activities will involve the removal of temporary facilities, equipment and materials from existing port and airport areas and will not involve excavation, blasting, ground loading or any activity capable of affecting tectonic or seismic conditions.

In summary, with regard to their significance, the impacts on tectonics and seismicity during the demobilisation phase are assessed as negative (–), with negligible intensity (IN = 1), localised spatial extent (EX = 1), occurring immediately during demobilisation activities (MO = 4), coincident with the mobilisation period (PE = 1), short-term and fully reversible (RV = 1), with low synergistic interaction effects (SI = 1), with direct effect (EF = 4), discontinuous in nature (PR = 1), characterised by immediate recovery potential (MC = 1), and non-cumulative (AC = 1). In terms of their overall significance, these impacts are assessed as **negligible**.

| Impacts on tectonics and seismicity      |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |
|------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|
| Project Activities / Elements            | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment |
| Cement plug installation and abandonment | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19 Negligible         | Medium                     |
|                                          |            |                |             |             |                  |                    |              |             |                  |               |                   |                       | NEGLIGIBLE                 |

#### 10.1.4.4 Soil

##### 10.1.4.4.1 Drilling preparation and mobilisation phase

During the drilling preparation and mobilisation phase, potential impacts on soil will be very limited, as onshore activities will be confined to existing paved areas within the Port of Igoumenitsa and existing facilities at Corfu International Airport. No construction works involving land take, vegetation clearance, earthworks, soil stripping, deep excavation or backfilling are required. The main activities will include preparation of the temporary logistics base, installation of prefabricated units, welfare facilities, temporary fencing, signage, utility connections and loading or staging of equipment and materials.

As these activities will take place within already modified areas, no direct disturbance of natural soils is expected. Minor and localised interaction may occur only where utility connections or installations require limited works within existing paved surfaces. The only potential impact on soil quality would come from the accidental spill of fuels, oils, chemicals or other hazardous materials during equipment mobilisation, temporary storage or handling. However, these risks will be controlled through use of designated storage areas, bunding, spill kits, good housekeeping and immediate spill response procedures.

In summary, with regard to their significance, the impacts on soil during the mobilisation phase are assessed as negative (–), with negligible intensity (IN = 1), localised spatial extent (EX = 1), occurring immediately during mobilisation activities (MO = 4), coincident with the mobilisation period (PE = 1), short-term and fully reversible (RV = 1), with low to moderate synergistic interaction effects (SI = 1–2), direct (EF = 4), discontinuous in nature (PR = 1), characterised by short-term recovery potential (MC = 2), and non-cumulative (AC = 1). In terms of their overall significance, these impacts are assessed as **negligible**.



| Impacts on soil                                   |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|---------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                     | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| Onshore base equipment and utilities installation | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Low                        | NEGLIGIBLE          |
| Onshore loading/unloading or staging              | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 1                 | 21                    | Low        | Low                        | NEGLIGIBLE          |

#### 10.1.4.4.2 Exploration drilling operations phase

Onshore activities will be limited to logistical support at the Project's shore base at the Port of Igoumenitsa, including storage, vessel support, and coordination activities. No new onshore construction, excavation or disturbance of natural ground is required, and therefore no direct physical impact on soil resources is anticipated. No industrial or maintenance works are planned at the shore base.

Accidental contamination of paved surfaces could occur as a result of minor leaks or accidental releases of fuels, lubricants, chemicals, waste oils, contaminated materials or hazardous materials during handling and temporary storage. If not promptly contained, such releases could create a pathway for contaminants to reach underlying soils through cracks, joints, drainage points or damaged surface areas. However, the Project will implement dedicated chemical and waste management procedures, including segregation of materials, appropriate packaging and labelling, use of bunded or contained storage areas, routine inspection of containers, spill prevention measures and immediate response to any accidental release. Rainfall runoff from operational areas will be managed through the existing port drainage system. These controls will minimise the likelihood of contaminants reaching soil and support the prompt containment and remediation of any incident.

In summary, with regard to their significance, the impacts on soil during the drilling operations phase are assessed as negative (-), of negligible intensity (IN=1), localised to the onshore port area (EX=1), immediate (MO=4), temporary throughout the drilling period (PE=1), short-term and fully reversible following cessation of activities (RV=1), with limited synergistic effects with existing port operations (SI=2), direct (EF=4), either periodic or occasional depending on the activity (PR=1-2), with short-term recovery after completion of drilling (MC=1), and non-cumulative (AC=1). Overall, these impacts are assessed as **negligible**.

| Impacts on soil                                          |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|----------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                            | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| Logistics base chemicals management                      | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 2                | 1             | 1                 | 21                    | Low        | Low                        | NEGLIGIBLE          |
| Logistics base waste management (including HW)           | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 2                | 1             | 1                 | 21                    | Low        | Low                        | NEGLIGIBLE          |
| Logistics base drainage (discharge of rainwater run-off) | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | Low                        | NEGLIGIBLE          |

#### 10.1.4.4.3 Demobilisation and abandonment phase

During the demobilisation and abandonment phase, potential impacts on soil will be associated with removal of temporary facilities, dismantling of the logistics base, loading of equipment, waste contractor collections and final cleaning of the port area. These activities will be localised within the paved operational areas of the shore base in Igoumenitsa port.

No excavation, soil removal or permanent alteration of land surfaces is expected during demobilisation. Potential effects on soil would therefore be limited to accidental contamination, such as minor leaks or releases of fuels, oils, cleaning materials, liquid wastes or contaminated residues during dismantling, loading, waste handling and transfer operations. These risks will be managed through the continued application of spill prevention and response procedures, appropriate packaging and containment of wastes, inspection of containers prior to handling and collection, use of licensed waste contractors, and immediate clean-up of any accidental release. The likelihood of contaminants reaching underlying soils is minimized due to the implementation of these prevention and control measures.

Following demobilisation, all temporary facilities, equipment and waste materials will be removed from the shore base, and no residual source of soil impact will remain. Overall, impacts on soil during demobilisation and abandonment are expected to be negligible, localised, short-term and reversible.

In summary, with regard to their significance, the impacts expected on soil during the demobilisation and abandonment phase are assessed as negative (-), of negligible intensity (IN=1), localised (EX=1), immediate (MO=4), coincident with demobilisation activities (PE=1), short-term reversible (RV=1), non-synergistic (SI=1), direct (EF=4), discontinuous (PR=1), of immediate recovery (MC=1), and non-cumulative (AC=1). In terms of their overall significance, these impacts are assessed as **negligible**.

| Impacts on soil                           |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|-------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements             | Nature (S) | Intensity (IN) | Extent (Ex) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| Waste contractor collections (all wastes) | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | Low                        | NEGLECTIBLE         |

#### 10.1.4.5 Seabed – sediment

##### 10.1.4.5.1.1 Drilling preparation and mobilisation phase

During the drilling preparation and mobilisation phase, the principal impact pathways through which impacts to seabed sediment may occur are vessel presence and activity associated with vessel movements.

Due to the nature and scale of the implementation works, the drilling preparation and mobilisation phase of the project is not expected to cause any change in the seabed sediment characteristics of the study area. Mobilisation activities will be temporary and of short duration and therefore will not result in any measurable changes to sediment conditions, such as sediment characteristics including grain size distribution, effective thickness, nutrients, metals and hydrocarbon content.

In summary, with regard to their significance, the impacts expected on seabed / sediment characteristics during the mobilisation phase are assessed as negative (–), of negligible intensity (IN=1), within the local area (EX=2), occurring immediately during mobilisation activities (MO = 4), coincident with mobilisation activities (PE=1), short-term reversible (RV=1), non-synergistic (SI=1), direct (EF=4), discontinuous (PR=1), immediately restored (MC=1), and non-cumulative (AC=1). In terms of their overall significance, these impacts are assessed as **minor**.

| Impacts on seabed - sediment      |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |     |                            |                     |
|-----------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|-----|----------------------------|---------------------|
| Project Activities / Elements     | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |     | Valued Receptor Assessment | Impact Significance |
| Mobilisation of MODU to well site | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 21                    | Low | Medium                     | MINOR               |

#### 10.1.4.5.1.2 Exploration drilling operations phase

With regard to the exploration drilling operations phase, the principal impact pathways through which impacts to seabed sediment may occur are:

- Sediment removal,
- Introduction of a permanent structure on the seabed,
- Increase in sediment remobilisation and resuspension,
- Increase in sediment grain size,
- Increase in sediment effective thickness,
- Alterations to sediment chemical composition,
- Planned discharges,
- Drilling contingency activities.

The MODU's position will be maintained using its dynamic positioning (DP) system, which controls thrusters based on satellite navigation and acoustic reference systems. No anchors will be deployed, and no anchor handling or anchor-related seabed disturbance will occur. Seabed interaction associated with the temporary positioning transponders will be minor and spatially confined, and the transponders will be recovered following completion of operations.

Due to the nature and scale of the exploration works, the exploratory drilling operation phase of the project is likely to cause permanent changes to the seabed sediment characteristics of the study area. Operational activities, including cement discharges at seabed are expected to directly and immediately affect the local area at a discontinuous periodicity; resulting in a cumulative impact with a long-term reversibility and restoration.

The fine-grained bathyal marine sediment in the area is predominantly composed of “Mud” and “Silty clay” material. Survey results suggest a sediment compositional split of 85% fine-grained sediment, 15% as “Sand”, and an absence of “Gravel”. Resulting in increased suspended particulates, low energy depositional conditions, and generally low TOC concentrations. Hydrocarbon concentrations in surface sediments are generally low; with no evidence of hydrocarbon contamination or of measurable geochemical signatures associated with the underlying natural-gas accumulations. Any metal or metalloid concentrations were

reflective of concentrations reported from neighbouring Mediterranean offshore and coastal environments; suggesting the presence of natural geochemical variability rather than localized contamination (Annex 02, ESBS). Any changes to the sediments chemical composition as a result of external inputs, such as discharges, may alter the natural conditions of the sediment in the local area.

Increased suspended sediment concentrations via resuspension pose a threat to sediment composition and distribution, as disturbed fine sediments are more susceptible to longer periods of resuspension than that of coarse sediments with a larger grain size. Furthermore, slow current speeds of under 1 m/s at Project location water depths, may result in decreased dispersion and reversibility of impacts to disturbed sediment (see Annex 02, ESBS).

Operational activities, including MODU drilling with wellhead and casing installation, will directly and immediately impact sediment over a long-term duration. This activity will result in measurable long-term changes to sedimental conditions within the local area; such as disturbance of the seabed due to the removal of sediment from the drill site, re-distribution of the disturbed material due to discharges increasing suspended fine matter within the water column, and the addition of infrastructure to the seabed resulting in long-term alterations to the environment.

Based on the current design, the permanent physical footprint on the seabed associated with the exploration activity will be less than 1 m<sup>2</sup>. All temporary subsea infrastructure (including the BOP, marine riser, and transponders) will be removed; no production facilities, pipelines, control umbilicals, or surface installations will be installed. However, the retained well-head and cement plug will result in a permanent alteration of the physical seabed condition and the disturbance of the sediment composition at the drilling location.

Drilling and associated activities will result in the accumulation of drill cuttings and water-based drilling fluid discharges to the seabed (riserless drilling). Discharge of cuttings and fluids may lead to changes in sediment quality through sediment disturbance, redistribution and deposition of drilling-related materials onto the seabed. This may lead to minor localised physical and physio-chemical effects. These direct impacts are expected to be of high intensity with immediate effect over a short duration; with the potential for reversibility and restoration once the activity has ceased.

Cuttings dispersion modelling considered two seasonal periods: Season 1, from October to March, and Season 2, from April to September. These seasons were selected to represent the main metocean variability in the study area. Season 1 corresponds to the winter circulation regime, characterised by stronger and more variable winds and enhanced cyclonic activity, while Season 2 represents the summer circulation regime, with more stable atmospheric conditions, prevailing north-westerly winds over the Ionian Sea and lower average wind speeds.

The principal effect on the seabed is expected to be localised covering or smothering, where deposited material exceeds the 6.5 mm effective-thickness screening threshold<sup>62</sup>. This exceedance is predicted up to a maximum distance of 85.4 m from the well in both seasons, with a lower distance of 37.9 m under the 10-year Season 2 case.

Cuttings dispersion modelling also considers whether deposited material could increase the local median grain size. The baseline sediment at the discharge point is very fine, with a median grain size of approximately

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<sup>62</sup> 5% of species affected, according to [https://www.sintef.no/globalassets/project/erms/reports/erms-report-no-9\\_threshold-non-toxic-stressors\\_tno.pdf](https://www.sintef.no/globalassets/project/erms/reports/erms-report-no-9_threshold-non-toxic-stressors_tno.pdf)

10 µm. A modelled risk above the 5% screening threshold occurs when the resulting median grain size exceeds approximately 116 µm. Grain-size change maximum predicted distances are 283 m in Season 1 and 397 m in Season 2.

These modelling results indicate that the morphological effect of drilling discharges will remain confined to the vicinity of the well location and will be driven mainly by physical sediment change rather than chemical toxicity. The footprint is therefore spatially limited and does not indicate a potential for any significant marine geomorphological change.

Hydrodynamic conditions at the drilling location will further contribute to the dispersion and redistribution of discharged material. Bottom currents and episodic marine processes may promote resuspension and reworking of fine sediments, preventing long-term consolidation of deposits. As a result, any seabed modification is expected to be localised, temporary to medium-term in nature and subject to natural sedimentary rebalancing processes.

The baseline sediment conditions showed negative oxidation reduction potential (ORP), which is indicative of the ability to break down contaminants and support biological processes; and is associated with cohesive fine-grained deposits, limited permeability and low oxygen penetration. Discharge modelling for both oxygen change and toxicity of chemicals suggests that discharge did not produce significant risk after 45 days after discharges cease. Given that the risk of oxygen depletion is low, this reduces the impact on associated sediment processes being affected, such as bioturbation.

The risk of smothering by cuttings will be greatest where thickness of cuttings is greatest. The threshold of thickness to be considered for smothering is 6.5mm (Singsaas et al., 2007). Studies suggest that generally increased sediment depth correlates positively with benthic mortality rates, increasing burial time with changes to sediment size differing from that of the species native sediment (Maurer, D., et al., 1981). The increase in grain size and effective thickness of the sediment, as a result of the cuttings discharge, has potential to disrupt natural processes like bioturbation; causing immediate, direct, and medium-term alterations to the environment in question. As stated within the discharge modelling report, the maximum thickness deposit on the seafloor at the release site after discharge was 56.9 mm in Season 1, and 53.9 mm in Season 2. After 10 years, a small reduction ranging between 55.4 mm in Season 1 and 52.3 mm in Season 2 is expected.

The increase in grain size, sediment thickness and increased distribution of fine particulate matter within the local area is likely to cause smothering on the seabed, impacting benthic habitats and organisms residing within the sediment. Sediment modelling indicates that exceedance of the effective-thickness screening threshold of 6.5 mm is highly localised around the well location. For both Season 1 and Season 2, the maximum predicted distance for exceedance is 85.4 m, indicating that potential smothering effects would be confined to the immediate drill-site area. In Season 2, under the 10-year high-current case, the predicted exceedance distance is lower, at 37.9 m, reflecting greater dispersion of deposited material. This result represents the conservative design-envelope assumptions applied in the modelling and is not necessarily representative of the expected operational discharge profile. Overall, the results indicate that sediment thickness impacts would be localised and limited in spatial extent, with the greatest potential for seabed smothering occurring close to the discharge point.

The discharge of water-based fluids and cuttings near sea surface (drilling with riser) is anticipated to have minimal impact on the seabed sediment within the project area, due to the surface-level discharge in water

depths of approximately 840m. Cuttings are discharged 12m below the water line, while drilling mud is recirculated. For the base-case well design, up to 453 tonnes of calcareous and carbonate-based cuttings and 1,158 tonnes of drilling fluids may be discharged on the well sections drilled with a riser in place. Impacts from this activity are expected to be indirect and temporary, with a short-term reversibility and restoration duration. It is anticipated that this material will be disperse naturally by currents throughout the water column, in relation to depth and lateral spread. This will reduce the accumulation of the discharged material within the activities area of influence, reducing the impact on the seabed sediments.

A median grain-size of approximately 75  $\mu\text{m}$  is deemed appropriate for almost all species, as this value corresponds to 0% of potentially affected species. Similarly, considering a 5% fraction of affected species, the median grain-size associated is approximately 48 $\mu\text{m}$  and 116 $\mu\text{m}$ , according to the cuttings dispersion modelling. Discharged cuttings typically range from very fine (20 $\mu\text{m}$ ) to very coarse (<10,000 $\mu\text{m}$ ) after removing the fluid. Although the very coarse grain size being discharged differs to the existing fine seabed sediment environment, the unlikely accumulation in one location minimises the impact on the seabed and reduces the potential sediment thickness. The change in sediment grain size as a result of sea surface discharges is unlikely to have a significantly detrimental impact on sedimentary processes.

Under normal operations, all cuttings associated with water-based mud (WBM) are expected to be free of hydrocarbon contamination and may be discharged in accordance with applicable regulatory requirements. The absence of hydrocarbons being released removes the potential for sediment contamination upon settlement. Furthermore, no chemicals proposed for use in drilling fluids or cementing operations are listed under Annex I (List of Substances the Use of Which Is Prohibited) of the Offshore Protocol.

During riserless surface casing operations, up to 64.6 m<sup>3</sup> of cement may be discharged directly onto the seabed. This would cause a direct, localised and permanent physical impact within the immediate drill-site footprint, mainly through increased sediment thickness, smothering and the formation of hardened cemented material on the seabed.

Cement slurry is mainly composed of cement powder and water, with selected additives such as retarders, accelerators and fluid-loss additives. These additives will be screened in accordance with UNEP/MAP offshore chemical requirements and the Operator's chemical management system, with preference given to low environmental-risk products.

The greatest impact is expected close to the well location, where cement deposition may exceed the 6.5 mm smothering threshold. In this area, the natural fine sediment surface may be replaced or covered by cemented material, altering sediment composition, grain-size characteristics and seabed microtopography. Localised changes to sediment pH and oxygen conditions may also occur following cement settlement and solidification, although chemical effects are expected to be limited by the use of screened, lower-risk additives.

A further 15 m<sup>3</sup> is estimated to be cement discharges from the MODU near sea surface from the tank wash out, following cleaning of the cementing equipment upon activity completions. With an addition discharge of up to 48m<sup>3</sup> of cement slurry to sea from the drillship in the event of an aborted cementing operation. This impact is expected to be immediate and indirect within the project area, leading to permanent and irreversible changes that are likely to require a long-term restoration duration. The impact from the surface discharges will be less intensive than seabed discharges, with the deposition being dispersed across a greater distance, as a result of the water column currents and deep water at the project location. Although



larger grain sizes than are typical of the baseline conditions will be released, the dispersal will reduce the accumulation and sediment thickness of these deposits on the seabed; the impact is expected to be reduced by rapid dilution and dispersion within the water column of the local area.

Discharge of macerated food waste from the MODU may cause a localised, indirect impact on seabed sediments through the addition of organic matter. For the 67-day drilling campaign, the MODU is estimated to discharge approximately 12,663 kg of food waste, equivalent to about 189 kg/day. As the MODU will remain stationary, discharges will occur from the same offshore location, approximately 12 m below the sea surface. Due to the deep water at Asopus-1, approximately 840 m, and the influence of surface and water-column currents, food waste is expected to disperse during settling and is not expected to accumulate in significant quantities at a single seabed location. Therefore, the potential effect on sediments is mainly limited to a minor and localised increase in organic input. Baseline data indicate low TOC concentrations, low ORP values and no evidence of significant organic or nutrient enrichment, consistent with an oligotrophic benthic environment (Annex 02, ESBS). Additional organic input from food waste could locally alter sediment nutrient conditions; however, the impact is expected to be temporary, short-term, reversible and limited to the Project area.

A further immediate impact on the seabed within the project area may occur during ROV operations, which may require wet parking of the ROV. This direct contact with the sediment will result in temporary sediment displacement, increased suspended sediment and subsequent deposition. This will be a short-term activity with potential for short-term reversibility and restoration of the seabed once the activity has concluded. The disturbed sediment will likely resettle in proximity to the ROV parking location and is unlikely to result in sediment winnowing or significant remobilisation and deposition of contaminated sediment. Furthermore, ROV activities will be conducted in accordance with the general obligations of the Barcelona Convention Offshore Protocol to prevent pollution and minimise impacts on the marine environment.

With regard to impacts from drilling contingency activities, re-spudding may increase the volume of discharged cuttings and cement, creating an additional or enlarged deposition footprint. Sidetracking may also increase cuttings generation, drilling fluid use and cementing requirements. An Emergency Disconnect Sequence could release riser contents at the seabed, resulting in localised deposition of drilling fluids and cuttings. Potential impacts include temporary turbidity, physical smothering of seabed sediments, minor alteration of surface sediment texture, and localised deposition of cement or drilling residues. These effects would be greatest during riserless drilling or seabed-level discharge scenarios. However, the effects would be spatially limited to the drilling area and would not affect sediment conditions at a regional scale.

In summary, with regard to their significance, impacts expected on seabed sediment characteristics during the operational exploration phase are assessed as negative (-), ranging from negligible to moderate (IN=1-4), within the project footprint to local (EX=1-2), immediate (MO=4), temporary or permanent throughout the drilling period, depending on the activity (PE=1-4), short-term to long-term reversible (RV=1-3), mostly synergistic (SI=1-2), direct (EF=4), irregular or continuous (PR=1-4), with immediate to long-term restoration (MC=1-4), and cumulative (AC=4). In terms of their overall significance, these impacts are assessed as **moderate**. Following the implementation of prevention and mitigation measures described in Chapter 11 of this ESIA, residual impacts are assessed as **minor**.



| Impacts on seabed - sediment                                                        |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |        |                            |                     |                                  |
|-------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|--------|----------------------------|---------------------|----------------------------------|
| Project Activities / Elements                                                       | Nature (S) | Intensity (IN) | Extent (Ex) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |        | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
| Drillship dynamic positioning (DP)                                                  | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 4                | 2             | 4                 | 27                    | Low    | Medium                     | MINOR               | MINOR                            |
| MODU drilling, wellhead and casing installation                                     | -          | 2              | 2           | 4           | 3                | 3                  | 2            | 4           | 4                | 4             | 4                 | 38                    | Low    | Medium                     | MINOR               | MINOR                            |
| Discharge of water-based fluids and cuttings to seabed (riserless drilling)         | -          | 4              | 2           | 4           | 2                | 2                  | 2            | 4           | 4                | 3             | 4                 | 41                    | Medium | Medium                     | MODERATE            | MINOR                            |
| Discharge of water-based fluids and cuttings near sea surface (drilling with riser) | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 4                | 2             | 4                 | 27                    | Low    | Medium                     | MINOR               | MINOR                            |
| Cement discharges at seabed                                                         | -          | 4              | 2           | 4           | 3                | 3                  | 2            | 4           | 1                | 4             | 4                 | 41                    | Medium | Medium                     | MODERATE            | MINOR                            |
| Cement discharges near sea surface from tank wash out                               | -          | 2              | 1           | 4           | 2                | 2                  | 2            | 4           | 1                | 2             | 4                 | 29                    | Low    | Medium                     | MINOR               | MINOR                            |
| Discharge of food waste from MODU and support/supply vessels                        | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 4                 | 28                    | Low    | Medium                     | MINOR               | MINOR                            |
| ROV Operation                                                                       | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 4                 | 22                    | Low    | Medium                     | MINOR               | MINOR                            |
| Drilling contingency activities                                                     | -          | 4              | 2           | 4           | 2                | 2                  | 2            | 4           | 1                | 3             | 4                 | 38                    | Low    | Medium                     | MINOR               | MINOR                            |

#### 10.1.4.5.1.3 Demobilisation and abandonment phase

With regard to the demobilisation and abandonment phase, the principal impact pathways through which impacts to seabed sediment may occur are:

- Presence of a permanent structure on the seabed,
- Increase in sediment remobilisation and resuspension, grain size and effective thickness,
- Alterations to sediment chemical composition,
- Planned discharges,
- Vessel presence and activity associated with vessel movements.

As part of the demobilisation phase, cement plugs will be installed within the wellbore; any seabed effects will be limited to associated discharges and the retained wellhead. These impacts are expected to be short-lived and localised with immediate effect on the sediment.

Wellbore contents and fluids are to be displaced and circulated before being discharged to the sea under controlled conditions in accordance with approved procedures. A further discharge of 1,312 tonnes of drilling fluid may be conducted during the well plug and abandonment process. The settlement of these discharges on the seabed may cause localised changes to physical properties of the seabed, through deposition and potential changes in sediment grain size and thickness. Significant chemical changes are not anticipated, given that no chemicals proposed for use in drilling fluids or cementing operations are listed under Annex I of the Offshore Protocol.

Furthermore, discharges of cement contaminated seawater are expected to occur during circulation and surface handling operations on the MODU. The direct and immediate impacts of cement materials on sediment composition, both physically and chemically, are expected to be cumulative and long-lived within the local area; leading to long-term reversal and medium-term restoration potential, upon settlement. However, any discharges associated with surface handling would result in lower intensity than that of any direct discharges to the seabed, due to the deep-water depths giving opportunity for dispersion and dilution. Any seabed settlement will therefore also be dispersed over a wider geographic range.

The removal of temporary subsea infrastructure is considered to have a direct and immediate positive impact on seabed sediment within the local area. Upon completion of well plug and abandonment activities, temporary equipment installed for the drilling campaign will be disconnected, secured, and demobilised; followed by a post-operation ROV seabed survey to confirm seabed clearance and verify that no debris or residual equipment remains at the well site. The removal of subsea infrastructure will enable natural processes the potential to restore and reverse within the medium-term, without the risk of chemical leaching from these structures into the sediment. It also removes the potential for any temporary subsea infrastructure to externally influence sedimentation.

The demobilisation and abandonment phase will be subject to further ROV operations previously discussed in the exploration drilling operations phase, supporting a post operation surveys to verify seabed clearance from debris before the rig release. The impacts of this activity during the demobilisation phase of the works are anticipated to be of similar nature to that of the support during the operations phase. Direct contact with the seabed within the project area, if any, will cause temporary displacement of sediment, increased suspended sediment and subsequent deposition.

In summary, with regard to their significance, the negative (-) impacts expected on seabed sediment characteristics during the operational exploration phase are assessed as of negligible to moderate intensity (IN=1-4), within the project footprint to local area (EX=1-2), immediate (MO=4), temporary to long-lived (PE=1-3), short-term to long-term reversible (RV=1-3), non-synergistic or synergistic (SI=1-2), direct (EF=4), irregular or continuous (PR=1-4), with immediate to long-term restoration (MC=1-4), and mainly cumulative (AC=1-4). In terms of their overall significance, these impacts are assessed as **moderate**. Following the implementation of prevention and mitigation measures described in Chapter 11 of this ESIA, residual impacts are assessed as **minor**.

| Impacts on seabed - sediment                     |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |        |                            |                     |                                  |
|--------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|--------|----------------------------|---------------------|----------------------------------|
| Project Activities / Elements                    | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |        | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
| Cement plug installation and abandonment         | -          | 2              | 1           | 4           | 3                | 3                  | 2            | 4           | 4                | 4             | 1                 | 33                    | Low    | Medium                     | MINOR               | MINOR                            |
| MODU circulation and surface handling operations | -          | 4              | 2           | 4           | 2                | 2                  | 2            | 4           | 4                | 3             | 4                 | 41                    | Medium | Medium                     | MODERATE            | MINOR                            |
| Removal of temporary subsea infrastructure       | +          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 4                | 1             | 1                 | 25                    | Low    | Medium                     | POSITIVE            | POSITIVE                         |
| ROV post operation seabed survey                 | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 4                 | 22                    | Low    | Medium                     | MINOR               | MINOR                            |

## 10.1.5 Impacts on the biotic environment

### 10.1.5.1 Terrestrial biotic environment

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#### 10.1.5.1.1 Terrestrial habitats – vegetation

The proposed activities for the exploration well concern the marine environment. The onshore activities are limited to the port of Igoumenitsa for the storage, staging, and loading or unloading of equipment, materials, consumables, and wastes and Corfu International Airport (CFU) for the support of the offshore operation by routine aviation logistics for the personnel transportation, including helicopter operations. The locations of the onshore infrastructure do not involve any significant vegetation. No impacts on terrestrial habitats on vegetation are anticipated, as all project activities do not involve disturbance of terrestrial land or vegetation.

#### 10.1.5.1.2 Terrestrial fauna

Similar to the terrestrial vegetation, terrestrial fauna is not expected to be affected by the proposed project. As all project activities are restricted to the marine environment, port of Igoumenitsa and Corfu International airport, no direct, indirect, or cumulative impacts on terrestrial fauna are anticipated. Avifauna is addressed separately in section 10.1.5.3.

### 10.1.5.2 Marine biotic environment

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#### 10.1.5.2.1 Benthic fauna

##### 10.1.5.2.1.1 Drilling preparation and mobilisation phase

The mobilisation of the MODU (Stena DrillMAX) to Block 2 via self-propulsion, together with associated support (Stephen Wallace Dick) and supply vessels (Swift Tide), has the potential to cause temporary disturbance to the benthic environment through:

- Vessel presence and activity associated with vessel movements
- Power generation.

Due to the nature and scale of the implementation works, direct impacts to the benthic habitats within the study area during the drilling preparation and mobilisation phase of the project are expected to be short-term and reversible. Mobilisation activities, including the mobilisation of the MODU to the well site and power generation, are temporary and of short duration. This activity will not result in any significant changes to the benthic habitat conditions; such as habitat characteristics including seabed sediment grain size distribution, demersal water quality, nutrients, metals and hydrocarbon content in sediments, or changes in the quality or composition of seabed species make up. The water depth at Asopus-1 is approximately 840m, and therefore limits surface-level contaminants interacting with the seabed and offers an extensive spatial range for dispersion within the water column. Additionally, due to the water depths in the Block 2 drilling area, the

MODU selected for the drilling will be dynamically positioned. Therefore, there will be no anchoring impacts associated with mobilisation of the rig.

In summary, with regard to their significance, the impacts expected on benthic fauna or habitat characteristics during the mobilisation phase are assessed as negative (-), of negligible intensity (IN=1), within the project area (EX=1), immediate (MO=4), coincident with mobilisation activities (PE=1), short-term reversible (RV=1), synergistic (SI=2), indirect (EF=1), discontinuous and irregular (PR=1), immediately restored (MC=1), and cumulative (AC=4). In terms of their overall significance, these impacts are assessed as negligible (Im=20), VR significance of medium, and impact significance as negligible. In summary, with regard to their significance, the impacts expected on benthic fauna or habitat characteristics during the mobilisation phase are assessed as negative (-), of negligible intensity (IN=1), within the project area (EX=1), immediate (MO=4), coincident with mobilisation activities (PE=1), short-term reversible (RV=1), synergistic (SI=2), indirect (EF=1), discontinuous and irregular (PR=1), immediately restored (MC=1), and cumulative (AC=4). In terms of their overall significance, these impacts are assessed as negligible (Im=20), VR significance of medium, and impact significance as negligible.

| Impacts on benthic fauna                             |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |
|------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|
| Project Activities / Elements                        | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment |
| Mobilisation of MODU to well site – power generation | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 1                | 1             | 4                 | 20 Negligible         | Medium NEGLIGIBLE          |

#### 10.1.5.2.1.2 Exploration drilling operations phase

With regard to the exploration drilling operations phase, the principal impact pathways through which impacts to benthic habitats may occur are:

- Sediment removal
- Introduction of a permanent structure on the seabed
- Increase in sediment remobilisation and resuspension
- Increase in sediment grain size
- Increase in sediment effective thickness
- Alterations to sediment and water column chemical composition
- Planned discharges
- Increase in underwater noise
- Increase in light pollution
- Vessel presence and activity associated with vessel movements.

The offshore EBS identified an overall infaunal community in the project areas that exhibited low values of abundance, species richness, and diversity; consistent with those typically recorded in Mediterranean bathyal environments. The macrobenthic communities are taxonomically poor, and the community structure is dominated by the phylum Annelida with a marked prevalence of the Sipunculid *Golfingia* sp.; which is a typical inhabitant of deep muddy sediments (LIGHTHOUSE, 2026[RN1.1]). The EBS did however record

deepwater coralligenous habitats in close proximity to the Asopus-1 well site. These were recorded at Station D4a and within a limited area on rocky substrate giving an isolated habitat of Mediterranean Upper Bathyal Rock (EUNIS (2022) code: ME15). The deepwater coral community identified at this location was characterized by the presence of corals attributable to *Antipathella subpinnata* or *Callogorgia verticillata* Annex 02, ESBS). These impact-receptor pathways are discussed below, with the drilling discharge modelling, taken into consideration (see section 6.9.1.1.1).

The ESBS did not identify any other sensitive seabed habitats (such as pockmarks or potential cold-gas-seeps) or sensitive species (such as coralligenous habitats and rodolith/maerl beds) in the immediate vicinity of the Asopus-1 wellsite with the exception of those observed at Station D4a (approximately 500m from the well site). However, it is noted that drilling will be within the South Adriatic Ionian Strait (Ecologically or Biologically Significant marine Area); which is designated for deepsea coral communities and deepsea sponge aggregations. This has not been deemed as a critical area in the immediate area of the drill site, due to the limited range of the deepsea coral habitats observed during the ESBS report (Annex 02).

During the exploratory drilling operation phase, direct disturbance to the seabed from MODU drilling operations, associated discharges (particularly riserless discharges of cuttings and associated drill fluids directly at the seabed), and sea surface discharges (both riser discharges of cleaned cuttings and routine operational discharges) all have capacity to impact the benthic community in the local vicinity of the Asopus-1 wellsite. These impacts can occur through smothering of the benthic community, and changes to both the physical and chemical sedimentary composition; due to the introduction of foreign substances (e.g. cement), as well as associated drill fluids, which could potentially disrupt respiratory surfaces. Although the macrobenthic community is considered to be taxonomically poor, with the exception of those observed at Station D4a during the offshore ESBS, the species which are present may be less tolerable to changes in environmental conditions given the relatively stable conditions at 840m below sea level.

Much of the existing benthic environment can be assigned to the Mediterranean Upper Bathyal Mud biocenosis (EUNIS code: ME65), characterised by fine-grained sediments and strongly limiting environmental conditions in terms of light availability, temperature, and organic matter supply. Furthermore, the biocenosis is characterized by the presence of carbonate oozes composed of skeletal remains of planktonic organisms such as coccolithophores, foraminifera, and pteropod molluscs.

Based on the current design, the permanent physical footprint on the seabed associated with the exploration activity is expected to be less than 1m<sup>2</sup> to retain the wellhead in place. The drilling activity, therefore, has a direct and potentially long-term impact on the benthic habitat at the location of the drilling, if infrastructure such as the well head remain in place. The direct disturbance will permanently remove the current benthic habitat and associated infauna residing within the seabed. In addition the wellhead structure will introduce a new hard substrate into an area of soft substrate, potentially increasing the potential for colonisation of invasive non-native species (INNS).

The temporary seabed disturbance during the drilling operation will result in the localised disturbance of seabed sediments and subsequent increases in SSC within the immediate vicinity of the well location. Sediment particles released into the water column are anticipated to disperse and settle progressively with increasing distance from the source. Whilst changes in the water quality and sediment quality as a result of drilling operations may have the potential to alter the benthic habitat and infaunal species. However,

adherence to MARPOL and the IMO Ballast Water Convention will help mitigate the potential impacts from INNS.

The associated discharge of cuttings may lead to changes in water quality, increases in suspended sediment, and smothering of the benthic environment. Discharged drilling fluid and cuttings will accumulate on the seafloor, leading to alterations in sediment grain size and could also result in alterations to the localised benthic community.

Metals in drilling fluids exhibit a very low bioavailability to marine animals (Neff et al., 1987), though there has been documented cases of bioaccumulation of barium sulphate, which is an inert, naturally occurring chemical. However, it is acknowledged that barium sulphate (Barite) will only be used as a contingency chemical during exploratory drilling. Where bioaccumulation has been documented, levels were not high enough to be harmful to species (Neff et al., 1987); therefore, it is unlikely that bioaccumulation effects would become significant. The expected main impact on the benthic environment is via smothering, owing to the overall low toxicity of most drilling fluids (NRC, 1983; Neff, 1987; Hinwood et al., 1994) as additives are screened through the operator's chemical management system using recognised offshore chemical screening schemes (e.g. PLONOR, OCNS, or equivalent).

Drilling discharge modelling suggested that grain-size change in sediments was identified as the primary contributor to overall risk. The significant risk extended up to 283m to the SW in Season 1 (October to March winter circulation – most frequent current scenario), and 396m to the SE in Season 2 (April to September summer circulation – high intensity currents scenario). After 10 years, this distance reduced to a maximum of 213m and 287m to the SW and SE, respectively. Both scenarios showed an impacted area of 27,500m<sup>2</sup>, but these assume a conservative scenario that all primary and contingent chemicals are used to the maximum concentrations.

Grain size change is of particular importance to the infaunal community, for which the current natural habitat consists of fine material; predominantly assigned to the “Mud” and “Silty clay” classes with an absence of “Gravel”. Deposits from the discharge may alter the structure of this habitat. This long-term increase in grain size is likely to result in unfavourable conditions for burrowing species within the deep muddy sediment; including the current community structure, which is dominated by the phylum Annelida and inhabited by Sipunculid *Golfingia* sp.. In addition, more sensitive isolated coral communities on rocky substrates will be of increased sensitivity to changes in sediment distribution and levels of introduced sedimentation as a result of drill cutting discharges.

The increased thickness of the sediments in these conservative scenarios, as a result of operational discharges, has the capacity to smother benthic species and the potential to reduce oxygen. However, discharge modelling for both oxygen change and toxicity of chemicals suggests that discharge did not produce significant risk after 45 days nor the 10-year modelling period. The modelling results also indicated a change in the effective thickness of the sediment, following the drilling discharges. The maximum thickness of deposit on the seafloor at the release site after discharge was 56.9mm in Season 1, and 53.9mm in Season 2. After 10 years, a small reduction ranging between 55.4mm in Season 1 and 52.3mm in Season 2 is expected.

Studies suggest that generally increased sediment depth correlates positively with benthic mortality rates, increasing burial time with changes to sediment size differing from that of the species native sediment (Maurer, D., et al., 1981). The increase in grain size and effective thickness of the sediment, as a result of



the cuttings discharge, has the potential to disrupt natural processes like bioturbation. The risk of smothering by cuttings will be greatest where thickness of cuttings is greatest. The threshold of thickness to be considered for smothering is 6.5mm (Singsass et al., 2007). This value is exceeded by the modelling predictions in both season 1 and 2. The conservative scenario modelling results show little decrease over the 10 year period and therefore the impacts from the change in sediment thickness are considered to be permanent.

This increase in sediment thickness will impact the benthic habitat within the immediate vicinity of the well site, which includes the infaunal community; the current benthic environment can be assigned to the Mediterranean Upper Bathyal Mud biocenosis (EUNIS code: ME65), characterized by fine-grained sediments and strongly limiting environmental conditions in terms of light availability, temperature, and organic matter supply. Furthermore, impacts will affect the limited rocky benthic habitats in the immediate vicinity of the well site dominated by deepwater coral species (Mediterranean Upper Bathyal Rock (EUNIS code: ME15). The increased sediment thickness will further reduce the ability of the organic matter supply to move through the sediment, as a direct result of the increased sediment thickness settling on top of the current finer material present.

The discharge of water based fluids and cuttings near sea surface during riser drilling is anticipated to have a localised impact on the benthic fauna or habitat, due to the surface-level discharge in water depths of approximately 840m. Cuttings are discharged 12m below the sea surface, while drilling mud is recirculated. For the base-case well design, up to 490 tonnes of calcareous and carbonate-based cuttings and 1,318 tonnes of associated drilling fluids may be discharged on the well sections drilled with a riser in place. Drilling discharge modelling suggested that grain-size change in sediments was identified as the primary contributor to overall screening-threshold exceedance. Under the conservative design-envelope assumptions applied in the modelling. The risk extended up to 283m to the SW in Season 1 (October to March winter circulation – most frequent current scenario), and 396m the SE in Season 2 (April to September summer circulation – high intensity currents scenario). After 10 years, this distance reduced to a maximum of 213m and 287m to the SW and SE, respectively. These results are not necessarily representative of the expected operational chemical-use and discharge profile.

It is anticipated that this material will be dispersed naturally by currents throughout the water column, with lower dispersion rates the further down the material travels and current speeds of under 1m/s. This will reduce the accumulation of the discharged material within the activities area of influence, reducing the impact on the benthic fauna or habitats. Under normal operations, all cuttings associated with water-based mud (WBM) are expected to be free of hydrocarbon contamination and may be discharged in accordance with applicable regulatory requirements.

A median grain-size of approximately 75µm is deemed an appropriate level for almost all benthic species, as this value corresponds to 0% of potentially affected species. Similarly, considering a 5% fraction of affected species, the median grain-size associated is approximately 48µm and 116µm. Discharged cuttings typically range from very fine (20µm) to very coarse (<10,000µm) after removing the fluid.

The change in sediment grain size, as a result of sea surface discharges of very coarse sediments, is likely to have a minor impact on the current benthic environment upon settlement. Although the discharged sediment differs to the existing substrate, it is unlikely to accumulate in one location due to the increased opportunity for dispersion within the water column; minimising the impact on the benthic environment. With



regards to contaminant releases, the absence of hydrocarbons being released (under normal operations), removes the potential for sediment contamination upon settlement which would prove harmful to the benthic ecosystem. Furthermore, no chemicals proposed for use in drilling fluids or cementing operations are listed under Annex I (List of Substances the Use of Which Is Prohibited) of the Offshore Protocol.

Drillship dynamic positioning (DP) transponders and remotely operated vessel (ROV) equipment will come into direct contact with the seabed during the operational phase, causing minor disturbance to the benthic habitat. This direct contact with the seabed habitat will result in temporary sediment displacement, increased suspended sediment, and subsequent deposition. This will be a short-term activity with potential for short-term reversibility and restoration of the seabed, once the activity has concluded. The disturbed sediment will likely resettle in proximity to the ROV wet-parking and transponder deployment locations, and is unlikely to result in sufficient levels of disturbance. Furthermore, these activities will be conducted in accordance with applicable AEPO conditions and with the general obligations of the Barcelona Convention Offshore Protocol to prevent pollution and minimise impacts on the marine environment.

During riserless surface casing operations, up to 64.6m<sup>3</sup> of cement will be discharged onto the seabed. The threshold of thickness to be considered for smothering is 6.5mm (Singsass et al., 2007), cement discharges are expected to exceed this thickness. Upon material settlement and solidification, localized changes may occur in oxygen and pH levels in the seabed sediment within the project footprint. These alterations will change the composition of the habitat and infaunal community in the local area. This discharge will directly impact the benthic habitat, resulting in continuous and irreversible alterations to the habitat, sediment composition and seabed landscape within the local area. The benthic habitat may change in composition as a result of the increase in grain size due to the introduction of cement material to the existing fine sediment environment, and an increase in sediment thickness causing smothering of seabed habitats including potentially higher sensitivity habitats (e.g. deepsea corals).

Discharges to the marine environment have the potential to affect benthic habitats and communities through temporary changes in water quality, increased turbidity and exposure to drilling related discharge. However, there is no direct impact pathway from pipe dope on the benthic environment as there are only minor traces when risers are in place. Benthic fauna may be exposed to water-column changes, including riser drilling discharges, cement discharges, drainage water, cooling water, ballast water and wastewater. Benthic fauna and habitats may additionally overlap with seabed-associated discharge plumes resulting from riser drilling discharges, pipe dope, blowout preventer discharges and cementing activities.

It is estimated that 15m<sup>3</sup> is to be discharged from the MODU at the sea surface, following cleaning of the cementing equipment upon activity completions, with additional discharges of up to 48m<sup>3</sup> of cement slurry to sea from the drillship in the event of an aborted cementing operation. The impact on the benthic environment from the surface discharges will be less intensive than seabed discharges, with the deposition being dispersed across a greater distance. Although larger grain sizes than are typical of the baseline conditions will be released, the impact on the benthic environment is expected to be reduced by rapid dilution and dispersion within the water column; reducing the accumulation of these deposits in a concentrated location on the seabed, with a medium-term reversibility.

Desalination unit discharges from MODU and the uplift and discharge of cooling water from MODU will take place during the operational phase. With regards to cooling water, there will be an estimated total discharge of 101,760m<sup>3</sup>/day based on all systems running and topside cooling system running all 3 pumps. There will

be an estimated daily brine discharge of 1,174m<sup>3</sup> (brine from water maker, condensate) and 238m<sup>3</sup> (brine from water maker, 2 RO systems). Desalination and cooling water discharges are unlikely to significantly affect benthic species as the discharge point will be within surface waters; with a discharge depth between 5-12m below sea surface, allowing for dispersion and dilution with limited potential for impact on the benthic habitat.

Other operational discharges, including discharges of sanitary waste, food waste and drainage water from the MODU and support or supply vessels are also anticipated to have minimal impacts on the benthic habitats; due to the discharges occurring at sea surface-level (maximum depth of 12m below surface). These discharges will then be subject to dilution and dispersion before any potential interaction with the seabed habitats and, therefore, any additional nutrients associated with discharged material will not have significant impact on the benthic infauna, habitat or associated sedimentary processes.

Discharge of ballast from MODU and support or supply vessels is not anticipated to have any significant impact on the benthic habitat. There may be a daily ballast discharge of 22m<sup>3</sup> during the operations (discharges at 1m below the surface). Under normal operations, ballast water is discharged only after treatment to meet the D2 performance standard for living organisms; in exceptional circumstances, sequential ballast water exchange to the D1 standard may be used as a contingency measure in approved offshore areas, in line with the vessel's Ballast Water Management Plan. Implementation of the approved Ballast Water Management Plan and adherence with MARPOL and the IMO Ballast Water Convention will contribute to mitigating any negative impacts on the benthic environment, following discharge; use of a certified Ballast Water Treatment System (BWTS) to meet the D-2 standard for ballast water discharges, with D-1 open-ocean exchange retained only as a contingency method where applicable and ensure all ballast operations recorded in the Ballast Water Record Book. Although there is potential for ballast water material to reach the benthic habitat following discharge, the contents is not considered to cause negative impacts to the seabed given the mitigations mentioned previously in this section.

In summary, with regard to their significance, the impacts expected on benthic fauna/habitat characteristics during the exploration drilling operations phase are primarily assessed as negative (-), with intensity ranges from negligible to high (IN=1-4), spatial extent from within the project site to regional/national (EX=1-4), occurring immediately during drilling activities (MO=4), coincident with drilling activities are permanent (PE=1), ranging from short-term reversible to irreversible (RV=1-4), with non-synergetic to synergistic interaction effects (SI=1-2), direct and indirect (EF=1-4), discontinuous and continuous in nature (PR=1-4), characterised by immediate to long-term restoration (MC=1-4), and non-cumulative to cumulative (AC=1-4). In terms of their overall significance, these impacts are assessed as negligible to moderate (Im=19-55), VR significance of medium to high, and impact significance as negligible to significant.

Following the implementation of prevention and mitigation measures described in **Chapter 11** of this ESIA, **residual impacts** are assessed as **minor**.

| Impacts on benthic fauna      |            |                |             |             |                  |                    |             |             |                  |               |                   |                       |     |                            |                     |                                  |
|-------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|-------------|-------------|------------------|---------------|-------------------|-----------------------|-----|----------------------------|---------------------|----------------------------------|
| Project Activities / Elements | Nature (S) | Intensity (IN) | Extent (Ex) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synerg (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |     | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
| MODU safety exclusion zone    | -          | 1              | 2           | 4           | 1                | 1                  | 2           | 1           | 4                | 1             | 4                 | 25                    | Low | Medium                     | MINOR               | MINOR                            |

| Impacts on benthic fauna                                                                                                 |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |        |                            |                     |                                  |
|--------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|--------|----------------------------|---------------------|----------------------------------|
| Project Activities / Elements                                                                                            | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |        | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
| and support/supply vessel transfers                                                                                      | -          |                |             |             |                  |                    |              |             |                  |               |                   |                       |        |                            |                     |                                  |
| Drillship dynamic positioning (DP)                                                                                       | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 4                | 1             | 1                 | 25                    | Low    | Medium                     | MINOR               | MINOR                            |
| MODU drilling, wellhead and casing installation                                                                          | -          | 8              | 2           | 4           | 1                | 4                  | 2            | 4           | 4                | 4             | 1                 | 52                    | Medium | Medium                     | MODERATE            | MINOR                            |
| Discharge of water based fluids and cuttings to seabed (riserless drilling)                                              | -          | 8              | 2           | 4           | 1                | 4                  | 2            | 4           | 4                | 4             | 4                 | 55                    | Medium | Medium                     | MODERATE            | MODERATE                         |
| Discharge of water based fluids and cuttings near sea surface (drilling with riser)                                      | -          | 1              | 4           | 4           | 1                | 2                  | 2            | 1           | 1                | 2             | 4                 | 28                    | Low    | Medium                     | MINOR               | MINOR                            |
| Cement discharges at sea bed                                                                                             | -          | 8              | 1           | 4           | 1                | 2                  | 2            | 4           | 4                | 4             | 4                 | 51                    | Medium | Medium                     | MODERATE            | MODERATE                         |
| Cement discharges near sea surface from tank wash out                                                                    | -          | 2              | 1           | 4           | 1                | 1                  | 2            | 1           | 1                | 2             | 4                 | 24                    | Low    | Medium                     | MINOR               | MINOR                            |
| Pipe dope use during drilling                                                                                            | -          | 4              | 2           | 4           | 1                | 1                  | 2            | 4           | 4                | 2             | 4                 | 38                    | Low    | Medium                     | MINOR               | MINOR                            |
| Testing of MODU blowout preventer (Discharges)                                                                           | -          | 4              | 1           | 4           | 1                | 1                  | 2            | 4           | 2                | 2             | 4                 | 34                    | Low    | Medium                     | MINOR               | MINOR                            |
| Discharge of sanitary waste from MODU and support/supply vessels                                                         | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 4                 | 25                    | Low    | Medium                     | MINOR               | MINOR                            |
| Discharge of food waste from MODU and support/supply vessels                                                             | -          | 2              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 27                    | Low    | Medium                     | MINOR               | MINOR                            |
| Desalination unit discharges from MODU                                                                                   | -          | 2              | 1           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 4                 | 26                    | Low    | Medium                     | MINOR               | MINOR                            |
| Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 4                 | 25                    | Low    | Medium                     | MINOR               | MINOR                            |
| Uplift and discharge of cooling water from MODU                                                                          | -          | 2              | 1           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 4                 | 26                    | Low    | Medium                     | MINOR               | MINOR                            |
| Discharge of ballast from MODU and                                                                                       | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 4                 | 25                    | Low    | Medium                     | MINOR               | MINOR                            |

| Impacts on benthic fauna                          |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |                                  |
|---------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|----------------------------------|
| Project Activities / Elements                     | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
| support/supply vessels                            | -          |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |                                  |
| Support activities (movement of support vessels)  | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 4                 | 25                    | Low        | Medium                     | MINOR               | MINOR                            |
| Lighting from MODU                                | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | Medium                     | NEGLIGIBLE          | NEGLIGIBLE                       |
| Chemical use and storage                          | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 4                 | 19                    | Negligible | Medium                     | NEGLIGIBLE          | NEGLIGIBLE                       |
| Radioactive source use and storage (well logging) | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 4                 | 19                    | Negligible | Medium                     | NEGLIGIBLE          | NEGLIGIBLE                       |
| ROV Operation                                     | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | Medium                     | NEGLIGIBLE          | NEGLIGIBLE                       |

#### 10.1.5.2.1.3 Demobilisation and abandonment phase

With regard to the demobilisation and abandonment phase, the principal impact pathways through which impacts to benthic habitats may occur are:

- Introduction of a permanent structure on the seabed
- Increase in sediment remobilisation and resuspension
- Increase in sediment grain size
- Increase in sediment effective thickness
- Alterations to sediment and water column chemical composition
- Planned discharges
- Vessel presence and activity associated with vessel movements.

Minor discharges of cement contaminated seawater may occur during cement plugging and abandonment activities, primarily during circulation and surface handling operations on the MODU. However, any discharges associated with surface handling would result in lower intensity than that of any direct discharges to the benthic habitats, due to the deep water depths giving opportunity for increased dispersion and dilution within the local area. Any impacts on the benthic habitat will therefore also be dispersed over a wider geographic range with a short-term recoverability duration. However, the persistence of these materials (e.g. cement) may remain in the benthic ecosystem upon settlement.

The removal of temporary subsea infrastructure is considered to have both a positive and negative impact on benthic fauna and habitats. Upon completion of well plug and abandonment activities, temporary equipment installed for the drilling campaign will be disconnected, secured, and demobilized, followed by a post-operation ROV seabed survey to verify seabed clearance and identify any Project-related debris or residual equipment requiring recovery.

The removal of any subsea infrastructure will enable natural processes to improve and restore within the long-term, without the risk of chemical leaching of any nature into the benthic ecosystem or disturbance to the benthic faunal communities. However, temporary infrastructure may provide habitat that could sustain

colonisation which could be used by benthic fauna; in addition, removal will result in resuspension of the seabed sediment and disturbance to the benthic habitat in the local area. Benthic communities may be deterred from inhabiting temporary infrastructure due to the relatively short project duration and the ongoing infrastructure deployment activities, the negative impact of the removal is reduced. Overall, the benthic fauna will be positively impacted, as this activity will allow conditions to return to near baseline conditions.

As part of the demobilisation phase, cement plugs will be installed within the wellbore; potential effects on the benthic ecosystem will arise from associated discharges within the local area. Wellbore contents and fluids may be displaced and circulated before being discharged to the sea, under controlled conditions in accordance with approved procedures; including weighted drilling mud, cement contaminated mud, water, barite, and cement polymers. Up to 1,312 tonnes of drilling fluid may be conducted during the well plug and abandonment process.

The settlement of these discharges and their constituents on the seabed will cause localised physical changes to the seabed by increasing the sediments grain size, causing increased suspended sediment and increased dispersion. Significant chemical changes are not anticipated, given that no chemicals proposed for use in drilling fluids or cementing operations are listed under Annex I (List of Substances the Use of Which Is Prohibited) of the Offshore Protocol. The nature of cement does however give rise to persistence in the benthic ecosystem, resulting in a medium-term reversibility and long-term restoration to the benthic habitats original natural state.

The demobilisation and abandonment phase will also be subject to a ROV post-operations seabed survey, to verify seabed clearance and identify any Project-related debris or residual equipment requiring recovery. The impacts of this activity is anticipated to be of similar nature to that of the support during the operations phase; direct contact with the seabed will cause temporary displacement of sediment, increased suspended sediment and subsequent deposition. This will be a short-term activity with very limited impact on the seabed if at all as the ROV operation acts more as an embedded mitigation to ensure the seabed is being left in an acceptable condition.

Settlement of resuspended sediment on the benthic substrate during wet landings will be localised, due to the low current speeds and larger grain size presence than before the demobilisation and abandonment phase. The use of an ROV will also introduce artificial noise and lighting; these influences may alter behaviour of the benthic fauna and result in short-term avoidance of the project site. However, ROVs are a common component of offshore inspections in the benthic environment and behavioural impacts are only expected when the ROV is in close proximity to benthic fauna. Additionally, ROV surveys have a short duration and its impacts will not expand outside the project area.

In summary, with regard to their significance, the impacts expected on benthic fauna and habitat characteristics during the demobilisation and abandonment phase are primarily assessed as negative (-), with intensity ranges from negligible to low (IN=1-2), spatial extent from within the project site to local area (EX=1-2), occurring immediately during demobilisation activities (MO=4), coincident with demobilisation activities ranges from brief to permanent (PE=1-4), ranging from short to medium-term reversible (RV=1-2), with non-synergetic to synergistic interaction effects (SI=1-2), direct (EF=4), discontinuous to continuous in nature ranges from (PR=1-4), characterised by immediate restoration to long-term restoration (MC=1-4), and non-cumulative to cumulative ranging from (AC=1-4). In terms of their overall significance, these impacts are

assessed as negligible to low (Im=19-34), VR significance of medium to high, and impact significance as minor.

However, there is one impact (the removal of temporary subsea infrastructure) that has been assessed as positive (+), with the intensity as low (IN=2), spatial extent as localised (EX=2), immediate occurrence (MO=4), short-term coincidence with demobilisation activities (PE=2), medium-term reversibility (RV=2), with moderate synergistic interaction effects (SI=2), direct (EF=4), is irregular or discontinuous in nature (PR=1), characterised by long-term restoration (MC=4) and cumulative (AC=4). In terms of the overall significance, this impact is assessed as low (Im=33), VR significance of high, and impact significance as minor.

| Impacts on benthic fauna                         |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|--------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                    | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| MODU circulation and surface handling operations | -          | 2              | 2           | 4           | 2                | 2                  | 2            | 4           | 4                | 2             | 4                 | 34                    | Low        | Medium                     | MINOR               |
| Removal of temporary subsea infrastructure       | +          | 2              | 2           | 4           | 2                | 2                  | 2            | 4           | 1                | 4             | 4                 | 33                    | Low        | Medium                     | POSITIVE            |
| Removal of temporary subsea infrastructure       | -          | 2              | 2           | 4           | 2                | 2                  | 2            | 4           | 1                | 4             | 4                 | 33                    | Low        | Medium                     | MINOR               |
| Cement plug installation and abandonment         | -          | 2              | 2           | 4           | 4                | 2                  | 2            | 4           | 1                | 4             | 4                 | 35                    | Low        | Medium                     | MINOR               |
| ROV post operation seabed survey                 | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | Medium                     | NEGLIGIBLE          |

## 10.1.5.2.2 Plankton

### 10.1.5.2.2.1 Drilling preparation and mobilisation phase

During the drilling preparation and mobilisation phase, no significant impacts on plankton are expected. Offshore activities will be limited to the transit and positioning of the MODU and support vessels at the well location.

### 10.1.5.2.2.2 Exploration drilling operations phase

During the drilling operations phase, two types of impacts on phytoplankton and zooplankton can be potentially expected. Those are physical impacts and impacts from chemical toxicity (Mazlova et al., 2019). The most likely chemical impacts would stem from toxic effects from the release of drilling related chemicals and fluids (drilling cuttings and mud). Copper ion (Cu<sup>2+</sup>), which can be used as H<sub>2</sub>S scavenger in drilling and mud systems, is widely considered the most toxic metal for plankton, inhibiting photosynthesis by Cu-chlorophyll formation (Küpper et al., 1996; Küpper et al., 2002). Iron (III) chloride (FeCl<sub>3</sub>), which is widely used in offshore drilling for water treatment and fluid processing, causes phytoplankton and bacterioplankton to coagulate (which is also the reason for its use in the seawater desalination industry). However, in open-ocean marine systems it is also an important, limiting micronutrient promoting phytoplankton growth (Küpper et al., 2026). This applies e.g. for the central Pacific and the Southern Ocean,



but not for the Mediterranean which receives ample particulate iron input from aeolian (wind-borne) dust from North African and Middle Eastern desert regions (Küpper et al., 2026).

According to the Chemical Use Plan (see Annex 05) for the exploration drilling of Asopus-1 there will not be any use of the abovementioned compounds (Copper ions or iron (III) chloride). Potential chemical effects on plankton are therefore assessed based on the full inventory, environmental classification and discharge quantities of the chemicals proposed for use.

Drilling discharges (cuttings and mud) can also have physical impacts, by increasing turbidity / reducing water transparency (which is a common problem also where mining operations involve disposal of waste rocks and soil in nearshore waters; Thomas et al., 2003) and thus light exposure for phytoplankton (and consequently reducing primary productivity) as well as coagulation of plankton communities. Also, particles from drill cuttings and mud may clog the gills or digestive tract of zooplankton in the immediate area surrounding the discharge site.

Using culture studies, Mazlova et al. (2019) observed sublethal effects of drilling wastes on both the diatom *Phaeodactylum tricornutum* and water fleas (*Daphnia magna*) as representative organisms for phytoplankton and zooplankton, respectively. However, it is also clear that effects in the sea are likely local in close proximity to a drilling operation given the high concentrations required for lethal effects on *Daphnia* (> 1 g/l).

When it comes to seismic surveys there are no clear impacts on the plankton. There is still uncertainty about population-level and long-term ecosystem impacts. McCauley et al. (2017) suggested that the abundance of copepods and cladocerans can be reduced by approximately 50% at distances of 509–658 m from seismic air guns, where received sound levels reach 156 dB re 1  $\mu\text{Pa}^2\text{s}$  SEL and 183 dB re 1  $\mu\text{Pa}$  peak-to-peak. No significant reduction in abundance is detected at distances of 973–1,119 m, corresponding to sound levels of 153 dB re 1  $\mu\text{Pa}^2\text{s}$  SEL and 178 dB re 1  $\mu\text{Pa}$  peak-to-peak. Vereide et al. (2023). found limited mortality and no detectable behavioral or gene-expression changes in this copepod species. Impacts from Vertical Seismic Profile, if they occur, are likely to be localized and greatest near the seismic source.

Following the implementation of prevention and mitigation measures described in Chapter 11 of this ESIA, residual impacts are assessed as **minor**.

| Impacts on plankton                                                                                  |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |     |                            |                     |                                  |
|------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|-----|----------------------------|---------------------|----------------------------------|
| Project Activities / Elements                                                                        | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |     | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
| Discharge of water-based fluids and cuttings to seabed (riserless drilling) (indirect impacts)       | -          | 1              | 2           | 3           | 2                | 4                  | 2            | 1           | 2                | 1             | 4                 | 26                    | Low | High                       | MODERATE            | MINOR                            |
| Discharge of water based fluids and cuttings near sea surface (drilling with riser) (direct impacts) | -          | 2              | 8           | 2           | 2                | 2                  | 2            | 1           | 1                | 1             | 4                 | 37                    | Low | High                       | MODERATE            | MINOR                            |
| Discharge of water based                                                                             | -          | 1              | 8           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 4                 | 33                    | Low | High                       | MODERATE            | MINOR                            |



| Impacts on plankton                                                                                                                       |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |                                  |
|-------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|----------------------------------|
| Project Activities / Elements                                                                                                             | Nature (S) | Intensity (IN) | Extent (Ex) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
| fluids and cuttings near sea surface (drilling with riser) (indirect impacts)                                                             |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |                                  |
| Cement discharges at sea bed (direct impacts)                                                                                             | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 4                 | 24                    | Low        | High                       | MODERATE            | MINOR                            |
| Cement discharges at sea bed (indirect impacts)                                                                                           | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 4                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
| Cement discharges near sea surface from tank wash out (direct impacts)                                                                    | -          | 1              | 2           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 4                 | 26                    | Low        | High                       | MODERATE            | MINOR                            |
| Cement discharges near sea surface from tank wash out (indirect impacts)                                                                  | -          | 1              | 2           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 4                 | 21                    | Low        | High                       | MODERATE            | MINOR                            |
| Discharge of sanitary waste from MODU and support/supply vessels (direct impacts)                                                         | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
| Discharge of sanitary waste from MODU and support/supply vessels (indirect impacts)                                                       | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                            |
| Discharge of food waste from MODU and support/supply vessels (direct impacts)                                                             | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
| Discharge of food waste from MODU and support/supply vessels (indirect impacts)                                                           | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                            |
| Desalination unit discharges from MODU (direct impacts)                                                                                   | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
| Desalination unit discharges from MODU (indirect impacts)                                                                                 | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                            |
| Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels (direct impacts) | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |

| Impacts on plankton                                                                                                                         |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |                                  |
|---------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|----------------------------------|
| Project Activities / Elements                                                                                                               | Nature (S) | Intensity (IN) | Extent (Ex) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
| Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels (indirect impacts) | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                            |
| Uplift and discharge of cooling water from MODU (direct impacts)                                                                            | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
| Uplift and discharge of cooling water from MODU (indirect impacts)                                                                          | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                            |
| Discharge of ballast from MODU and support/supply vessels (direct impacts)                                                                  | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
| Discharge of ballast from MODU and support/supply vessels (indirect impacts)                                                                | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                            |
| Vertical seismic profile (VSP) activities (direct underwater noise disturbance)                                                             | -          | 4              | 4           | 4           | 2                | 2                  | 2            | 4           | 1                | 2             | 1                 | 38                    | Low        | High                       | MODERATE            | MINOR                            |
| Lighting from MODU                                                                                                                          | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               | MINOR                            |

#### 10.1.5.2.2.3 Demobilisation and abandonment phase

During the demobilisation and abandonment phase, no significant impacts on plankton are expected. Offshore activities will be limited to the removal of the temporary subsea structure and transit of the MODU and support vessels.

### 10.1.5.2.3 Marine fish fauna

#### 10.1.5.2.3.1 Drilling preparation and mobilisation phase

The mobilisation of the MODU (Stena DrillMAX) to Block 2 via self-propulsion, together with associated Platform Supply Vessels (PSV), has the potential to cause temporary disturbance to marine fish communities through: increased underwater noise and vessel presence and activity associated with vessel movements.

Additional indirect pathways exist through impact to prey availability, access to breeding and feeding grounds from increased disturbances of vessels, and underwater noise within the marine environment. Fish species occurring within the immediate project area comprise a highly diverse assemblage of at least 371 species, including 310 ray-finned fishes (*Actinopterygii*), 60 cartilaginous fishes (*Chondrichthyes*), and 1 lamprey (*Petromyzonti*), with the wider 100 km study area supporting approximately 410 species (see Section 2.4.4 and Annex 01 of the ESBS). This assemblage includes numerous species of conservation concern, particularly elasmobranchs, with a proportion of which are classified under IUCN Red List as Vulnerable (10), Endangered (10), or Critically Endangered (15) within the project site in the Mediterranean region (see Section 2.4.4 of the ESBS).

Additional vessel presence will cause spatial displacement to fish in close proximity; however, this will be greatest for species occurring nearer the vessel, while effects on deeper-water species are expected to be limited. Potential behavioural responses to vessel presence may include temporary avoidance of the area, changes in schooling behaviour, different swimming direction/patterns, movement to deeper waters and short-term interruptions to feeding activities. Conversely, fish may also aggregate around the vessels location and use the vessel as a shelter, which in turn can attract predators. This is mostly likely to occur when the vessel is stationary in port, travelling at very low speeds or once it arrives to the drilling site. If fish species do avoid the vessels' location, this is a short-term impact (duration the vessel is in the immediate area) and once the vessel departs, fish will return to the area in a short timeframe, reducing the overall severity of the impact.

Fish are known to detect and respond to a broad range of underwater sound frequencies, with responses varying depending on species-specific hearing capabilities, behavioural ecology, life stage, and environmental conditions (Popper and Hawkins, 2019). Behavioural responses to underwater noise typically include temporary avoidance, movement away from the sound source, altered swimming behaviour and short-term disruption to feeding or schooling activity (Popper and Hastings, 2009). Due to the limited understanding of hearing capabilities for many marine fish species, underwater noise assessments are commonly undertaken using functional hearing groups rather than individual species. These hearing groups are based on fish auditory sensitivity and physiological characteristics, particularly the presence and function of a swim bladder. Popper et al. (2014) and Popper and Hawkins (2019) developed a series of fish hearing groups and associated acoustic impact thresholds to assess the susceptibility of different fish types to underwater noise exposure. The fish species expected to occur within the project area have therefore been assigned to the functional hearing groups described below:

- Group 1 - Fish with no swim bladder: These species lack a swim bladder or other gas-filled chamber. They are generally less susceptible to barotrauma (tissue injury caused by a difference in pressure between a gas-filled space inside an organ and the surrounding tissues.). Hearing is primarily through detection of particle motion rather than sound pressure. This group includes species such as flatfish, sharks and rays. Large tuna species are also included in this group, notably the Atlantic bluefin tuna (*Thunnus thynnus*), Albacore (*T. alalunga*), Bigeye tuna (*T. obesus*) and Skipjack tuna (*Katsuwonus pelamis*). Very little data have been acquired on the responses of fish to particle motion.
- Group 2 - Fish with swim bladders that are not involved in hearing: These species possess a swim bladder, which can respond to sound pressure. However, the swim bladder is not connected to the inner ear, as a result, hearing is largely dependent on particle motion like Group 1. Species in this group are typically sensitive to a relatively narrow frequency range.

- Group 3 - Fish with swim bladders close to but not directly connected to the ear: These species can detect both particle motion and sound pressure. They are sensitive to a broader frequency range than Groups 1 and 2. Examples include members of the Gadidae, Anguillidae and Sciaenidae families.
- Group 4 - Fish where hearing involves the swim bladder: The swim bladder is connected, directly or indirectly, to the inner ear. These species are sensitive to both particle motion and sound pressure. They typically hear across a wide frequency range (up to several kHz) and exhibit greater hearing sensitivity than Groups 1-3. Examples include members of the Holocentridae, Sciaenidae and Clupeidae families, as well as the large group of otophysan fishes.
- Group 5 - Fish eggs and larvae: Available evidence suggests hearing abilities are broadly similar to those of the adult form of the species. Swim bladders may develop during larval stages, potentially increasing susceptibility to barotrauma. There remains limited information on the effects of underwater sound and vibration on fish eggs and larvae.

The acoustic impact of vessel non-impulsive noise on fish fauna during the mobilisation phase is spatially constrained and strongly governed by vessel transit speed. Acoustic propagation modelling under representative operational hydrodynamic conditions indicates that during the approximately 7-hour transit of a platform supply vessel from the Port of Igoumenitsa to Block 2 at an open-water maximum speed of up to 14 knots, an individual animal experiences a brief pass-by exposure (0.5 to 1 hour). The threshold for low – level behavioural disturbance for fish (150 dBrms re 1  $\mu$ Pa) is predicted to reach a distance of 91 m. Upon arrival at the project site or at the port of Igoumenitsa, as the vessel is assumed to reduce speed (4 knots) for manoeuvring, this behavioural response zone reduces to 31 m.

Ambient baseline underwater noise levels within the region are typical of coastal and offshore environments subjected to anthropogenic shipping activity, with levels characteristically estimated between 100 and 120 dBrms re 1  $\mu$ Pa. The temporary increase in noise associated with project vessels is therefore expected to represent only a minor addition to the existing acoustic environment. Given the offshore location of the project, the mobility of affected species, and the extensive availability of suitable habitat throughout the region, deep-water fish and elasmobranch populations are not expected to experience significant or long-term impacts because of vessel-related underwater noise.

Impact pathways from vessel presence and underwater noise, indirect impact pathways may occur through changes in prey availability. As discussed, fish species may either avoid the area in response to disturbance or aggregate around vessels. These behavioural changes could result in temporary alterations in the distribution and availability of prey resources for predators. These effects are expected to be localised, short-term and reversible following the termination of mobilisation.

Overall, the impacts on fish from the marine support vessels during mobilisation are assessed as negative. Due to the fact that the vessels are constantly moving, any individual fish will only experience the noise briefly as the ship passes by (for less than an hour). Because of this short duration and small footprint, both the direct physical disturbance and noise effects are considered minor.

In summary, with regard to their significance, the impacts on fish fauna during the mobilisation phase are assessed as negative ( $S = -1$ ), with negligible intensity ( $IN = 1$ ), localised spatial extent / within the project site ( $EX = 1$ ), occurring immediately during mobilisation activities ( $MO = 4$ ), coincident with the mobilisation period/temporary ( $PE = 1$ ), short-term and fully reversible ( $RV = 1$ ), non-synergistic ( $SI = 1$ ), with direct effect ( $EF = 4$ ), discontinuous in nature ( $PR = 1$ ), characterised by immediate recovery potential ( $MC = 1$ ), and non-

cumulative (AC = 1). The calculated Impact Magnitude is therefore negligible (Im = 19). Taking into account the High Valued Receptor assessment for marine fauna, the overall impact significance is assessed as **minor**. A breakdown of impact significance by activity is provided in the table below.

| Impacts on fish fauna                                                             |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|-----------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                                                     | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| Mobilisation of MODU to well site – power generation (direct spatial disturbance) | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               |
| Mobilisation of MODU to well site – power generation (direct UWN)                 | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               |
| Mobilisation of MODU to well site – power generation (indirect impacts)           | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               |

#### 10.1.5.2.3.2 Exploration drilling operations phase

With regard to the exploration drilling and other activities in the operations phase, the principal impact pathways through which impacts to marine fish communities may occur are underwater noise, spatial disturbance, planned discharges and artificial lighting.

Additional indirect pathways exist through impact to prey availability, access to breeding/feeding grounds and presence from discharges within the marine environment.

Firstly, underwater noise will be generated by non-impulsive MODU drilling activities and VSP operations (impulsive), as well as from power generation (noise from thrusters, machinery vibration and hydrodynamic flow noise) from the MODU and supply vessel activities. Potential impacts in fish species may include temporary avoidance of the area, changes in schooling behaviour, masking of biologically important sounds, disruption of feeding activities, altered swimming patterns, and increased energetic expenditure. Species possessing swim bladders that are connected to the auditory system (Groups 3 and 4) are highly sensitive to sound pressure, whereas cartilaginous fishes (Group 1), which lack swim bladders, are generally more sensitive to particle motion components of sound (Chapuis *et al.*, 2019).

Underwater noise modelling for the proposed impulsive noise VSP activities indicated that single-strike mortality and physical injury thresholds for all fish hearing groups were confined to within 125 m of the source. While each VSP operation is allocated a 12-hour survey window for tool deployment and testing, the active airgun discharge is limited to approximately 130 shots per well section, at 15-second firing intervals. This results in an active firing duration of approximately 97.5 minutes (1.63 hours) per section, with a contingency envelope evaluated up to 2.0 hours. Assessment using SEL-based criteria indicates that impact distances increase with exposure duration. During a 2-hour operational periods, mortality thresholds for sensitive fish (Groups 3/4) extended to 259 m (for 1 h), and 282 m (for 2 h), while recoverable injury thresholds extended to 285 m (for 1 h), and 422 m (for 2 h). For fish eggs and larvae (Group 5), mortality

ranges were predicted at 147 m (1 h), and 259 m (2 h). Overall, Fish Group 1 exhibited the smallest physical impact ranges, with mortality and recoverable injury remaining confined to 123 m for all exposure durations up to 2 hours. The low –level behaviour (150 dB) for all fish groups was predicted at 16.3 km. The Temporary Threshold Shifts for fish groups 3/4 and 1 the TTS was estimated at 1.7 km (for 0.5 h) up to 8.9 km (for 2 h).

These theoretical distances utilize a conservative mathematical approach by assuming that mobile fish remain at a single stationary coordinate for the entire duration of sound exposure. Because fish may move away from the immediate area upon sound onset and during the planned 20-to-30-minute soft-start procedure, the assumption of a stationary receptor accumulating sound energy over prolonged periods is rendered biologically not applicable. Furthermore, as noted in the scientific literature (Hawkins and Popper, 2017), a short-lasting startle response or temporary displacement does not equate to injury and is unlikely to affect key life functions or result in population-level changes to vital rates. Finally, given that the non-impulsive noise from drilling is some 25 dB lower than the noise arising from drillship operations during drilling activity, the contribution from drilling into the seabed is deemed negligible (the maximum distance for mortality and low-level behavioural effects is considered 31 m).

The hearing sensitivity of many Mediterranean fish species remains poorly understood and is therefore inferred from related species whose auditory capabilities have been studied. Of relevance and a species which auditory capabilities are known is the European hake (*Merluccius merluccius*), a commercially important demersal species that is classified as Vulnerable within the Mediterranean (IUCN, 2026). The species can occur at depths exceeding 370 m, overlapping with habitats present within the project area, and is considered to have medium hearing sensitivity. Other demersal fish assemblage's characteristic of the Eastern Ionian Sea, for example the blackbelly rosefish (*Helicolenus dactylopterus*), may exhibit localised behavioural avoidance of the project area during VSP operations. Similarly, deep-water elasmobranch species known to occur within the region, including species like the blackmouth catshark (*Galeus melastomus*), may demonstrate temporary movement away from noise-generating activities. Given the relatively large home ranges of many of these species and the extensive availability of suitable habitat within the wider region, any displacement is expected to be localised and temporary.

As identified in Section **Error! Reference source not found.**, vessel noise may also contribute to fish disturbance, particularly where cumulative underwater noise effects arise through the simultaneous operation of VSP operations, vessel movements and DP activities. Spatial overlap between these individual zones of influence may increase the likelihood of behavioural responses in fish species occurring within the immediate vicinity of operations. However, most species present within the project area are highly mobile and capable of avoiding localised disturbance sources.

Additionally, no significant impact pathway associated with vessel spatial presence is anticipated for fish species during operations, as most fish possess sufficient mobility to avoid vessels and operational infrastructure. In some cases, fish may aggregate around the stationary vessels and use the vessel as a shelter. However, any effects from vessel presence are expected to remain localised and temporary.

.Discharges to the marine environment have the potential to affect fish communities through temporary changes in water quality, increased turbidity, localised sediment deposition, and exposure to drilling related discharge. Drilling fluid will combine seawater, water-based mud and high-viscosity gel sweeps, with additions of xanthan gum and minor concentrations of soda ash. During the riserless drilling sections,



discharges will also include claystone and calcareous cuttings. The high-viscosity sweeps contain water-based additives including salts and water-soluble polymers, as well as contingency weighting and viscosifying materials. All chemical additives will be screened in accordance with recognised offshore chemical screening schemes.

Fish species may be exposed to water-column changes, including riser drilling discharges, cement discharges, drainage water, cooling water, ballast water and wastewater. Demersal and benthopelagic species may additionally overlap with seabed-associated discharge plumes resulting from riserless and riser drilling discharges, blowout preventer discharges and cementing activities

Drill cuttings dispersion modelling concluded that suspended material may be transported away from the discharge location under the influence of prevailing currents, with the plume extent varying according to seasonal oceanographic conditions. For the physical presence of suspended drill cuttings in the water column, a Predicted No Effect Concentration (PNEC) of 100,000 ppb (equivalent to 100 mg/L) has been applied as a screening threshold within the ERMS/DREAM risk-assessment framework. Elevated concentrations of discharged elements and compounds (such as calcium carbonate) are predicted to be localised and temporary, with environmental risk diminishing rapidly following termination of discharge activities due to dispersion and dilution processes within the open marine environment (see Section **Error! Reference source not found.**). Fish species occurring within discharge zones may temporarily avoid affected areas where elevated suspended solids reduce visibility or interfere with feeding behaviour. Small pelagic species may alter local schooling distributions, whilst demersal species could exhibit short-term avoidance of areas where sedimentation occurs.

Indirect impacts may also occur during discharge events through changes to prey availability. Reductions in water quality, increased turbidity, or localised effects on planktonic and benthic prey communities may temporarily alter feeding opportunities for fish species. Nevertheless, the offshore nature of the project area, combined with the temporary duration of discharges and rapid dilution characteristics of the receiving environment, indicates that impacts are likely to be limited to localised and short-term behavioural responses.

A specific consideration is justified for elasmobranch species of conservation concern, including those classified as Vulnerable, Endangered, or Critically Endangered under the Mediterranean IUCN Red List assessment. These species exhibit inherently low population growth rates, slow maturation, and low fecundity. With respect to shellfish receptors, deep-water cephalopods and crustaceans may be present within the wider Ionian Sea region. While octopus' species are typically associated with shallower shelf habitats and are therefore unlikely to occur in significant abundance within the project area, several oceanic and deep-water squid species are known from the Mediterranean Sea, including the European flying squid (*Todarodes sagittatus*), reverse jewel squid (*Histioteuthis reversa*), and umbrella squid (*Todaropsis eblanae*) (Bello et al., 1997; Palomba et al., 2021). These species are important components of pelagic and deep-water food webs and may serve as prey for fish, marine mammals and other higher trophic-level predators (Battaglia et al., 2011; Palomba et al., 2021). Deep-water crustaceans may also occur within the vicinity of the project area, including the giant red shrimp (*Aristaeomorpha foliacea*), blue and red shrimp (*Aristeus antennatus*), and deep-water rose shrimp (*Parapenaeus longirostris*), which are known to inhabit slope and bathyal environments throughout the Mediterranean (Cau et al., 2002; FAO, 2025). Consequently, any impacts on threatened elasmobranchs are expected to be short-term and localised due to their high mobility, wide-ranging distributions and the localised and short-term nature of project discharges, significant effects



on these elasmobranch and shellfish species or their populations are not expected. Any discharged material would be rapidly diluted and dispersed within the receiving environment, limiting the potential for population-level effects or sustained habitat alteration.

Finally, artificial lighting associated with the MODU and vessel may induce localised behavioural effects in some fish species through attraction or avoidance responses. Pelagic fish are known to aggregate around offshore structures (especially illuminated), potentially altering predator-prey interactions in the immediate vicinity of the MODU. However, such effects are expected to be spatially restricted and temporary. Given the short duration of the drilling campaign (expected duration of 67 days), the mobility of fish populations, and the extensive availability of similar habitat throughout the wider Ionian Sea, significant effects on the integrity of fish populations are not expected.

In summary, with regard to their significance, impacts expected on fish fauna during the operational exploration drilling phase are assessed as negative (-), ranging from negligible to moderate in magnitude (IN=1–4), occurring within the project footprint to the local area (EX=1–2), immediate or short-term (MO=2–4), temporary throughout the drilling period (PE=1–2), largely reversible to short-term reversible (RV=1–4), with limited to synergistic interactions depending on the activity (SI=1–2), direct or indirect in nature (EF=1–4), irregular to continuous (PR=1–4), with immediate to medium-term recovery (MC=1–3), and generally non-cumulative to cumulative (AC=1–4). Overall, most impacts are assessed as Minor, with **moderate** significance identified for activities associated with seabed and near-surface discharges of water-based drilling fluids and cuttings, cement discharges, vertical seismic profiling (VSP), support vessel movements causing direct spatial disturbance, and lighting from the MODU. Following the implementation of the prevention and mitigation measures described in Chapter 11 of this ESIA, all residual impacts are assessed as **minor**. Please refer to the table below for the detailed impact quantification by activity for the exploration drilling operational phase.

| Impacts on fish fauna                                                                         |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |                                  |
|-----------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|----------------------------------|
| Project Activities / Elements                                                                 | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
| MODU safety exclusion zone and support/supply vessel transfers (direct spatial disturbance)   | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               | MINOR                            |
| MODU safety exclusion zone and support/supply vessel transfers (indirect spatial disturbance) | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               | MINOR                            |
| MODU safety exclusion zone and support/supply vessel transfers (direct UWN)                   | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
| MODU safety exclusion zone and support/supply vessel transfers (Indirect UWN)                 | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                            |

| Impacts on fish fauna                                                                        |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |                                  |
|----------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|----------------------------------|
| Project Activities / Elements                                                                | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
| Drillship dynamic positioning (DP) - UWN (direct UWN)                                        | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 4                | 1             | 1                 | 23                    | Low        | High                       | MODERATE            | MINOR                            |
| MODU drilling, wellhead and casing installation (direct UWN)                                 | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 2                | 1             | 1                 | 21                    | Low        | High                       | MODERATE            | MINOR                            |
| MODU drilling, wellhead and casing installation (indirect UWN)                               | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 17                    | Negligible | High                       | MINOR               | MINOR                            |
| Discharge of water-based fluids and cuttings to seabed (riserless drilling) (direct)         | -          | 2              | 2           | 3           | 1                | 4                  | 2            | 4           | 2                | 1             | 4                 | 31                    | Low        | High                       | MODERATE            | MINOR                            |
| Discharge of water-based fluids and cuttings to seabed (riserless drilling) (indirect)       | -          | 2              | 2           | 3           | 2                | 4                  | 2            | 1           | 2                | 3             | 4                 | 31                    | Low        | High                       | MODERATE            | MINOR                            |
| Discharge of water-based fluids and cuttings near sea surface (drilling with riser) (direct) | -          | 2              | 2           | 4           | 1                | 4                  | 2            | 4           | 2                | 1             | 4                 | 32                    | Low        | High                       | MODERATE            | MINOR                            |
| Cement discharges at seabed (direct)                                                         | -          | 2              | 1           | 4           | 2                | 3                  | 2            | 4           | 2                | 2             | 4                 | 31                    | Low        | High                       | MODERATE            | MINOR                            |
| Cement discharges near sea surface from tank wash out (direct)                               | -          | 2              | 2           | 4           | 2                | 3                  | 2            | 4           | 2                | 1             | 4                 | 32                    | Low        | High                       | MODERATE            | MINOR                            |
| Pipe dope use during drilling (direct)                                                       | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
| Testing of MODU blowout preventer (discharges) (direct)                                      | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
| Discharge of sanitary waste from MODU and support/supply vessels (direct)                    | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               | MINOR                            |
| Discharge of food waste from MODU and support/supply vessels (direct)                        | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               | MINOR                            |
| Desalination unit discharges from MODU (direct)                                              | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               | MINOR                            |

| Impacts on fish fauna                                                                                                             |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |                                  |
|-----------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|----------------------------------|
| Project Activities / Elements                                                                                                     | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
| Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels (direct) | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               | MINOR                            |
| Uplift and discharge of cooling water from MODU (direct)                                                                          | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               | MINOR                            |
| Discharge of ballast from MODU and support/supply vessels (direct)                                                                | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               | MINOR                            |
| Vertical seismic profile (VSP) activities (direct UWN)                                                                            | -          | 4              | 4           | 4           | 1                | 1                  | 2            | 4           | 2                | 3             | 1                 | 38                    | Low        | High                       | MODERATE            | MINOR                            |
| Vertical seismic profile (VSP) activities (indirect UWN)                                                                          | -          | 4              | 4           | 4           | 1                | 1                  | 2            | 1           | 2                | 3             | 1                 | 35                    | Low        | High                       | MODERATE            | MINOR                            |
| Support activities (movement of support vessels) (direct UWN)                                                                     | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
| Support activities (movement of support vessels) (indirect UWN)                                                                   | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                            |
| Support activities (movement of support vessels) (direct spatial disturbance)                                                     | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               | MINOR                            |
| Lighting from MODU                                                                                                                | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 22                    | Low        | High                       | MODERATE            | MINOR                            |
| Chemical use and storage                                                                                                          | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 18                    | Negligible | High                       | MINOR               | MINOR                            |
| Radioactive source use and storage (well logging)                                                                                 | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 18                    | Negligible | High                       | MINOR               | MINOR                            |
| ROV Operation                                                                                                                     | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
| Logistics base drainage (discharge of rainwater run-off)                                                                          | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |

#### 10.1.5.2.3.3 Demobilisation and abandonment phase

During the demobilisation and abandonment phase, the activities of MODU circulation and surface handling operations, cement plug installation and abandonment, and post-operation seabed survey using a remotely operated vehicle (ROV) have the potential to cause temporary disturbance to marine fish communities through increased underwater noise and the presence and operation of vessels and subsea equipment within the project area.

As discussed in Section **Error! Reference source not found.** and **Error! Reference source not found.**, exposure to underwater noise may result in spatial displacement of fish fauna and cause temporary avoidance behaviour. However, within the project site, species present are inherently mobile and will avoid the area when disturbance is elevated. Comparatively to the drilling phase, activities associated with the demobilisation and abandonment phase will be shorter, reducing the possibility for prolonged impacts. Underwater noise impacts associated with these activities are expected to be temporary and localised within the project site, with recovery expected following activity completion.

The use of a ROV will introduce artificial noise and lighting which is unusual for the deep-sea environment. These influences may alter behaviour of the fish fauna and result in short-term avoidance of the project site. However, ROVs are a common component of offshore inspection in the deep-sea environment and behavioural impacts are only expected when the ROV is in close proximity to fish fauna. Additionally, ROV surveys have a short duration, and its impacts will not expand outside the project area.

The removal of temporary subsea infrastructure (including the BOP, marine riser, and transponders) is expected to provide a mixed (negative/positive) impact the restoration of the seabed and associated habitats and communities. The physical removal of the infrastructure may result in minimal disturbance to the seabed including resuspending sediment; however, this is not expected to impact fish fauna due to its short duration. Temporary infrastructure may provide habitat that could sustain colonisation which could be used by fish fauna, although the seabed in which the infrastructure was directly interacting with wont return to its previous natural state. Due to the relatively short project duration (expected 67 days), a singular well and the association of infrastructure deployment with ongoing operational activities that may deter colonisation of fish communities, the negative impact of the removal is reduced. Overall, the physical removal process constitutes a minor, short-term disturbance. Conditions will return toward baseline, and fish fauna be expected to resume their normal distribution within the project area.

Negligible effects on fish fauna are expected during the cement plug installation with impacts being contained within the localised well area. Discharges associated with these activities may temporarily impact the water quality of the surrounding area, which may directly impact fish physiology in addition to indirectly affecting prey availability. This impact should be minimal and temporary due to the dispersal of discharged materials. Any predicted impacts are expected to be short-term and reversible, with recovery expected following completion of activities.

Following completion of demobilisation and abandonment activities, all impacts are expected to reduce, and conditions will return towards baseline conditions.

In summary, with regard to their significance, impacts expected on fish fauna during the well abandonment phase are assessed as predominantly negative (-), with the removal of temporary subsea infrastructure resulting in both beneficial and adverse effects (+/-). The impacts are of negligible magnitude (IN=1), confined to the project footprint (EX=1), occurring immediately or in the short term (MO=3-4), temporary (PE=1), readily reversible (RV=1), non-synergistic (SI=1), direct or indirect depending on the activity (EF=1-4), irregular (PR=1), with immediate recovery (MC=1), and non-cumulative (AC=1). Considering the high sensitivity of the valued receptor, all impacts are assessed as **minor** in significance. Please refer to the table below for the detailed impact quantification by activity for the well abandonment phase.

| Impacts on fish fauna                                                           |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|---------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                                                   | Nature (S) | Intensity (IN) | Extent (Ex) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| Cement plug installation and abandonment                                        | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               |
| MODU circulation and surface handling operations (direct - UWN)                 | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               |
| MODU circulation and surface handling operations (direct - Spatial disturbance) | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               |
| MODU circulation and surface handling operations (direct - Discharge)           | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               |
| MODU circulation and surface handling operations (indirect)                     | -          | 1              | 1           | 3           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 15                    | Negligible | High                       | MINOR               |
| Removal of temporary subsea infrastructure                                      | +/-        | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               |
| ROV post operation seabed survey                                                | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               |

## 10.1.5.2.4 Marine mammals

### 10.1.5.2.4.1 Drilling preparation and mobilisation phase

The drilling preparation and mobilisation phase has the potential to induce impacts to marine mammals through the following principal pathways underwater noise, physical presence and associated spatial disturbance/elevated collision risk and indirect impacts through changes in prey availability.

The mobilisation of the MODU (*Stena DrillMAX*) via self-propulsion to Block 2 and any associated support / supply vessels has the potential to induce temporary spatial disturbance to marine mammals, eliciting behavioural disturbance. During transit, both coastal and offshore species may be impacted. The MODU will transit through the Mediterranean to the Asopus-1 location. It is assumed that the supply vessel transit will occur from Port of Igoumenitsa, notably through the Ionian Archipelago Important Marine Mammal Areas (IMMA) and South Adriatic Ionian Strait Ecologically or Biologically Significant Area (EBSA). Such behavioural disturbance may arise in the way of evasive manoeuvres (i.e., altering diving behaviour or swimming direction). The degree of response is species dependent, with avoidance behaviours of small-toothed cetaceans illustrated within 0.5 to 1.5 km of vessels (Richardson et al., 1995).

Neutral or positive reactions (i.e., attraction) has also been documented for a number of dolphin species (e.g., striped dolphin [*Stenella coeruleoalba*]) (Shane et al., 1986). Disturbance is of most concern to larger marine mammal species, including toothed and baleen whales (e.g., fin [*Balaenoptera physalus*] and sperm

[*Physeter macrocephalus*] whale). For this larger species collision is also a risk; though collisions with smaller species may also occur (van Waerebeek et al., 2007). Collisions are known to cause direct injury and/or mortality to marine mammals. Vessel strikes are identified as one of the primary anthropogenic threat to larger marine mammals (Wang et al., 2025). Larger tanker/cargo vessels are the most common vessels where collisions have been documented, likely attributed to vessel size and low manoeuvrability (Schoeman et al., 2020).

Vessel speed is one of the most significant factors in determining and subsequently reducing collision risk. Speeds of more than 14 knots present the greatest risks to marine mammals (IWC, 2011), and as a result slow vessel speeds should be committed to where practicable. However, it is noted that overall the drilling preparation and mobilisation phase is temporary and short in duration (approx. 15 d). A single MODU is not expected to significantly increase spatial disturbance to marine mammals when considered in the context of pre-existing vessel traffic within the Ionian Sea, where well defined shipping corridors already exist, though due to the sensitivity of receptors a precautionary approach will be taken with regard to the impact assessment. Collision hotspots are often considered to be greatest within coastal waters, but also Exclusive Economic Zones (EEZ) when considered in tandem with high vessel presence (Wang et al., 2025). When stationary, the MODU is not expected to induce significant spatial disturbance, with offshore species (e.g., Cuvier's beaked whale [*Ziphius cavirostris*]) considered to be of most relevance to the proposed drill locations.

Vessel noise (including DP) associated with support / supply vessels and the MODU further has potential to induce disturbance to marine mammals. Underwater noise modelling has been undertaken with regard to vessel noise, alongside other noisy activities. Marine mammals are split into functional hearing groups (low frequency [fin whale], high frequency [bottlenose dolphin, *Tursiops truncatus*], very high frequency [harbour porpoise, *Phocoena phocoena*] and phocid carnivores [Mediterranean monk seal, *Monachus monachus*]) based on their sensitivity to underwater sound, notably all groups have been considered as potentially present within the assessment area, where relevant. It is however noted that very high frequency cetaceans, such as harbour porpoise are noted as being rare in the Ionian Sea and so are unlikely to be impacted by noisy activities within the Block. In addition, noting the Block 2 location it is further unlikely that coastal species (i.e., Mediterranean monk seal and short-beaked common dolphin [*Delphinus delphis*]) will overlap directly with drilling activities, however individuals may intersect with zones of influence associated with underwater noise impacts. Please refer to Section 6.12.3.4 for detailed outline of individual species sensitivity to underwater sound.

Underwater acoustic modelling under representative operational hydrodynamic conditions indicates that during the transit of project vessels from the Port of Igoumenitsa to Block 2 (~130 km) at an open-water speed of 14 knots (an approximately 7-hour transit for the supply vessels), an individual animal experiences a brief pass-by exposure (0.5 to 1.0 hour). The Level B Harassment (threshold for behavioural disturbance applied in the underwater noise assessment) for all marine mammals was reached at a maximum distance of 19.7 km for the drillship, Stena DrillMAX, and 7.7 km for the platform supply vessel. These distances dropped to 153 m and 61 m, respectively, when vessel speeds were reduced from 14 knots down to 4 knots (speed assumed for manoeuvring). Low frequency cetaceans were deemed most sensitive (Sound Exposure Level [SEL]); threshold values representing an onset of auditory injury (PTS) were noted as maximum distances of 91 m for the Stena DrillMAX and 30 m for a PSV, while Temporary Threshold Shift (TTS) extended to distances of 596 m and 213 m, respectively (for a 0.5 to 1.0-hour pass-by exposure).

While the threshold for continuous-noise behavioural disturbance (120 dBrms) during 14-knot transit theoretically extends to 19.7 km, this represents a conservative screening result. The acoustic model relies on theoretical static screening, mathematically assuming an animal remains fixed at a single stationary coordinate for the entire duration of the exposure highly mobile marine fauna actively swim away from approaching sound sources, drastically reducing their accumulated exposure.

Furthermore, the Ionian Sea is already subject to intensive maritime uses and commercial shipping, which elevates the baseline ambient sound levels to approximately  $110 \pm 6$  dB re 1  $\mu$ Pa. Because the 120 dBrms screening threshold is highly conservative and falls within the range of this existing commercial shipping noise, the vessels transit is unlikely to cause biologically significant behavioural disruption before blending into the existing marine soundscape.

While auditory injury (PTS) theoretically could occur in the immediate vicinity of the vessels, the likelihood of such an event is considered extremely remote because the physical injury zone is exceptionally small (strictly confined to 30 m and 91 m). To mitigate these risks, the Project implements strict operational controls during transit; Project vessels will adhere to established transit routes and operate at speeds not exceeding 14 knots (reducing to 4 knots for site manoeuvring). Vessels will maintain a safe distance from any observed marine mammal, avoid approaching head-on, and steer behind their path. Through these embedded measures, and because individuals are expected to actively avoid the immediate sound source, the likelihood of auditory injury is expected to remain low, and individuals are expected to recover from any temporary behavioural disturbance following the vessel pass-by.

Any indirect impacts consequent of changes in prey availability is not foreseen to significantly impact marine mammals in the vicinity of the project. Marine mammals forage over large areas, with the Block area unlikely to represent a key foraging area for individuals. In addition, species are commonly generalist foragers with a number of prey options, should one be hindered consequent of project implementation. There is considered to be sufficient additional habitat available in the Ionian Sea and wider Mediterranean.

Vessels may transit through the Ionian Archipelago IMMA occurs, due to the IMMA being designated for the critically endangered Mediterranean monk seal, alongside other marine mammal species (short-beaked common dolphin). The South Adriatic Ionian Strait EBSA has also been considered as part of this impact assessment, due to its importance as key habitats for multiple species of marine mammals, notably Cuvier's beaked whale. However, as the site is not specifically designated for marine mammals and rather noted for its supporting habitats, it has not been considered a critical habitat as with the IMMA, however mitigation measures as identified with this report will be applied to both sites where overlap occurs. Further Natura 2000 sites designated for bottlenose dolphin are located in proximity to transit routes of support / supply vessels (e.g., Amvrakikos Kolpos, Delta Lourou Kai Arachthou (Petra, Mytikas, Evryteri Periochi, Kato Pous Arachthou, Kampi Filippiadas [GR2110001] and Esoteriko Archipelagos Ioniou (Meganisi, Arkoudi, Atokos, Vromonas [GR2220003]), as a result individuals from these sites may overlap with transit activities, however significant impacts to the integrity of such sites is not envisaged. It is acknowledged that the overall drilling programme is limited in duration (90 days) and that vessels and MODU will adhere to dedicated transit routes. Vessel speeds may be reduced as much as reasonably practicable when transiting through the IMMA and the EBSA site. All relevant international best practice and legal frameworks are expected to be adhered to.



In summary, with regard to their significance, impacts expected on marine mammals during the drilling preparation and mobilisation phase are assessed as negative (-) for all activities. The impacts are characterised by negligible impact magnitude (IN=1), confined to the project footprint (EX=1), occurring immediately (MO=4), temporary (PE=1), readily reversible (RV=1), with limited synergistic effects (SI=2), direct or indirect depending on the impact pathway (EF=4), irregular (PR=1), with immediate recovery (MC=1), and non-cumulative (AC=1). Considering the high sensitivity of the valued receptor, all identified impacts are assessed as **minor** in significance. Following the implementation of the prevention and mitigation measures described in Chapter 11 of this ESIA, residual impacts are expected to remain **minor**. Please refer to the table below for the detailed impact quantification by activity for the drilling preparation and mobilisation phase.

| Impacts on marine mammals                                                                  |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|--------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                                                              | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| Mobilisation of MODU to well site – power generation (direct spatial disturbance)          | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               |
| Mobilisation of MODU to well site – power generation (direct underwater noise disturbance) | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               |
| Mobilisation of MODU to well site – power generation (indirect impacts)                    | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               |

#### 10.1.5.2.4.2 Exploration drilling operations phase

The exploration drilling and operations phase has the potential to induce impacts to marine mammals through the following principal pathways: underwater noise, physical presence and associated spatial disturbance/elevated collision risk, discharges and subsequent impacts through changes in water quality, toxicity and bioaccumulation, artificial lighting and potential attraction/disturbance and indirect impacts through changes in prey availability.

With regard to the exploration drilling and operations phase, underwater noise and spatial disturbance is the greatest concern for marine mammals, though additional pathways may exist from discharges into the marine environment.

The physical presence of the MODU and transit of vessels is not envisaged to induce significant spatial disturbance over the course of the exploration drilling operations phase. This is attributed to pre-existing vessel traffic within the Ionian Sea, alongside a degree of habituation of individuals to presence over the course of this phase.

Elevations in underwater noise will arise from MODU drilling activities, MODU operation, support / supply vessel operations (including DP) and VSP activities during this phase. Impacts may arise in the form of

behavioural disturbance (i.e., masking) or direct injury. Underwater noise modelling (see Section 6.12.3.4) has also been undertaken for the VSP and drilling activities, alongside noise generated from vessel movements. Please refer to Section 6.12.3.4 and the ESBS for a detailed outline of individual species sensitivity to underwater sound. Low frequency cetaceans were overall concluded to be the most sensitive to the underwater noise sound sources due to the frequency of sound emitted.

While each VSP operation is allocated a 12-hour survey window for tool deployment and testing, the active airgun discharge is limited to approximately 130 shots per well section, at 15-second firing intervals. This results in an active firing duration of approximately 97.5 minutes (1.63 hours) per section, with a contingency envelope evaluated up to 2.0 hours. Assessment using SEL-based criteria indicates that impact distances increase with exposure duration. During realistic 2-hour operational periods, Level B Harassment was predicted at 2.6 km for all marine mammals. The threshold for Temporary Threshold Shift (TTS) was predicted to reach 13.9 km (0.5 h), 18.4 km (1 h), and 23.3 (2 h) for Low Frequency Cetaceans. Respectively, the TTS (178 dB SEL) for High-Frequency Cetaceans was predicted to reach 123 m (0.5h, 1h, 2h), whilst the TTS (144 dB SEL) for the Very High Frequency Cetaceans was estimated at 135 m (1 h) and 150 m (2 h). Finally, for the Phocid Pinnipeds the TTS (168dB SEL) was predicted at 456 m (1 h) and 616 m (2 h).

Level A Harassment (auditory injury/Permanent Threshold Shift, PTS) resulting from the VSP airgun array for Low-Frequency Cetaceans was predicted at 123 m based on the SPLpeak criterion. Based on the cumulative SEL criterion, the predicted Level A Harassment distances for active firing durations of 1.0 h and 2.0 h were 1.0 km and 2.0 km, respectively. For High-Frequency Cetaceans, Level A Harassment was predicted at 123 m based on the SPLpeak criterion, while the cumulative SEL criterion predicted distances of 123 m for active firing durations of 1.0 h and 2.0 h, respectively. For Very High-Frequency Cetaceans (Harbour Porpoise – VHF), Level A Harassment was predicted at 112 m based on the SPLpeak criterion and 123 m and 135 m based on the cumulative SEL criterion for active firing durations of 1.0 h and 2.0 h, respectively. For Phocid Pinnipeds (Monk Seal – PCW), Level A Harassment was predicted at 56 m based on the SPLpeak criterion and 112 m and 135 m based on the cumulative SEL criterion for active firing durations of 1.0 h and 2.0 h, respectively.

Drilling activities will take place directly within the South Adriatic Ionian Strait EBSA. Drilling noise is a continuous, low frequency sound. The maximum Level B Harassment threshold (120 dBrms) was noted as 91 m for all marine mammals. Level A Harassment was predicted for SEL for all hearing groups to 30 m, over a 24-hour drilling period (current proposed schedule identified within Section 6.6).

As identified in Section **Error! Reference source not found.**, vessel noise further has potential to induce disturbance to marine mammals, specifically when intra-cumulative impacts may arise (i.e., when drilling, vessel movement and VSP may occur concurrently) and zones of influences spatially overlap. Maximum distances whereby Level B Harassment (behavioral disturbance), injury or TTS may be reached is identified in the preceding sections. Transit of vessels will take place between the Igoumenitsa supply base and through the Ionian Archipelago IMMA and South Adriatic Ionian Strait EBSA; it is conservatively envisaged that up to 60 one-way transits will occur over the duration of the drilling campaign.

Discharges to the marine environment have the potential to cause temporal and localised changes, which may indirectly affect marine mammals through temporary effects on prey availability. Marine mammals will be most sensitive to discharges to the water column over the seabed (i.e., riser drilling discharges, cement

discharges, wastewater, drainage water, cooling water and ballast). Though due to the potential dive depth of sperm whales, individuals may overlap with plumes of discharges at the seabed (i.e., riserless drilling discharges, cement discharges, blowout preventer discharges).

Drill cuttings dispersion modelling concluded that suspended material may be transported away from the discharge location under the influence of prevailing currents, with the plume extent varying according to seasonal oceanographic conditions. For the physical presence of suspended drill cuttings in the water column, a Predicted No Effect Concentration (PNEC) of 100,000 ppb (equivalent to 100 mg/L) has been applied as a screening threshold within the ERMS/DREAM risk-assessment framework. Elevated concentrations of discharged elements and compounds (such as calcium carbonate) are predicted to be temporary, with environmental risk diminishing rapidly following termination of discharge activities due to dispersion and dilution processes within the open marine environment (see Section **Error! Reference source not found.**).

Metals within drilling fluids exhibit an overall very low bioavailability to marine animals, including marine mammals; bioaccumulation has however been documented in barium sulphate (barite) albeit with levels not high enough to harm species (Neff et al., 1987), and this compound is inert. This in combination with limited duration of exposure risk, concludes limited pathways for impacts to marine mammals to occur. Cement discharges are expected to be of low volumes and only occurring over short discharge durations. Noting the proposed well locations, offshore species are most likely to be impacted by discharges associated with drilling (i.e., drill cuttings, cement, etc.). It is unlikely that coastal species (i.e., Mediterranean monk seal) will overlap significantly with offshore discharge plumes, however noting worst-case distances associated with drill cuttings dispersion, overlap of individuals is plausible, if only for short durations. Routine discharges may occur during vessel transit; however all discharges will be under relevant best practice and performance standards. Marine mammals are highly mobile species; individuals are not expected to remain within discharge zones for any significant length of time. In addition, as noted, within an open ocean environment, discharged fluids are anticipated to rapidly disperse and dilute. As such there is limited potential for toxicity impacts to species that would impact the integrity of species populations over the course of the drilling programme. Any impacts that do occur to marine mammals and other megafauna and their prey species are expected to be short-term and localised, with recovery expected once individuals exit the discharge zone. It is acknowledged as stated within Section 6.7. that no planned discharge of radioactive material is predicted, based on embedded mitigation, no residual risk to marine mammals consequent of radioactive exposure is envisaged.

While marine mammals may respond to high light levels through behavioural disturbance, physiological impacts and through predator-prey relations. Studies have quantified potential penetration of light from vessels down to 200 m water depth, however offshore dispersion of artificial light is overall poorly understood and quantified (Marangoni et al., 2022). Marine mammal exposure to artificial light associated with drilling is expected to be limited, due to the mobile nature of individuals and short duration of the drilling campaign (expected duration of 67 days).

Any indirect impacts consequent of changes in prey availability is not foreseen to significantly impact marine mammals in the vicinity of the project. Marine mammals forage over large areas, with the Block area unlikely to represent a key foraging area for individuals. In addition, species are commonly generalist foragers with a number of prey options, should one be hindered consequent of project implementation. There is considered to be sufficient additional habitat available in the Ionian Sea and wider Mediterranean.

In addition, spatial disturbance and underwater noise impacts consequent of ROV operation is not anticipated to induce significant impacts to marine mammals. Such surveying is expected to be negligible when considered in the wider context of project activities, i.e., disturbance from drilling, VSP vessel presence, etc.

As within Section **Error! Reference source not found.**, the extent of an impact has been upgraded for certain activities where support vessel transit routes and impact zones of influences (based on modelling outcomes) may overlap with the Ionian Archipelago IMMA, due to the sensitivity of receptors within this area. Further Natura 2000 sites are located within proximity, however as stated in preceding sections, significant impacts to site integrity is not envisaged; such sites are located beyond the perceived zones of influence of VSP activities for high frequency cetaceans. It is further acknowledged that the overall drilling programme is limited in duration.

It is expected for the purpose of noisy activities (most impulsive noise sources [VSP activities]) that a marine mammal mitigation plan will be developed and implemented as appropriate. The plan will define the applicable mitigation measures, taking account of relevant ACCOBAMS guidance and regulatory requirements. During VSP activities specifically, soft-start procedures will be implemented and visual monitoring of marine mammals by a dedicated marine mammal observer will take place within a 500 m visual zone prior to the commencement of noisy works; passive acoustic monitoring will also be conducted. Furthermore, Vessel speeds may be reduced as much as reasonably practicable when transiting through the IMMA and the EBSA site. All relevant international best practice and legal frameworks are expected to be adhered to.

With regard to discharges, it is further assumed that all relevant best practices (i.e., development of Waste/Chemical Management Plans, adherence to Greek and international legal frameworks, low toxicity/low bioaccumulation potential chemicals to be used, etc.) will be implemented, where technically suitable. As above, such measures have been considered as part of project design/embedded mitigation. No planned discharge from the MODU or Project vessels shall be made if at any point a vessel is within the Ionian Archipelago IMMA or the Nisoi Paxoi Kai Antipaxoi Kai Evryteri Thalassia Periochi (GR2230003) Natura 2000 site.

In summary, with regard to their significance, impacts expected on marine mammals during the exploration drilling operations phase are assessed as negative (–) for all activities. The impacts range from negligible to low in magnitude (IN=1–4), extending from the project footprint to transboundary scales where relevant (EX=1–8), occurring immediately or in the short term (MO=2–4), temporary (PE=1–2), reversible to readily reversible (RV=1–2), with limited synergistic effects (SI=1–2), direct or indirect depending on the impact pathway (EF=1–4), irregular to continuous (PR=1–4), with immediate to short-term recovery (MC=1–2), and non-cumulative to cumulative (AC=1–4). Considering the high sensitivity of the valued receptor, **significant** impacts are predicted for direct and indirect underwater noise associated with Vertical Seismic Profiling (VSP) activities, reflecting the sensitivity of marine mammals to impulsive underwater noise. **Moderate** impacts are associated with drillship dynamic positioning, MODU drilling and wellhead/casing installation, discharges of drilling fluids and cuttings, cement discharges, pipe dope use, blowout preventer testing, and lighting from the MODU. The remaining activities are assessed as **minor** due to their localized, temporary and reversible nature. Following the implementation of the prevention and mitigation measures described in Chapter 11 of this ESIA, residual impacts are reduced to **moderate** for VSP activities and **minor** for all

remaining activities. Please refer to the table below for the detailed impact quantification by activity for the exploration drilling operations phase.

| Impacts on marine mammals                                                                            |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |                                    |
|------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|------------------------------------|
| Project Activities / Elements                                                                        | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance | Final Residual Impact Significance |
| MODU safety exclusion zone and support/supply vessel transfers (direct spatial disturbance)          | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               | MINOR                              |
| MODU safety exclusion zone and support/supply vessel transfers (direct underwater noise disturbance) | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               | MINOR                              |
| MODU safety exclusion zone and support/supply vessel transfers (indirect impacts)                    | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                              |
| Drillship dynamic positioning (DP) (direct impacts)                                                  | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 4                | 1             | 4                 | 28                    | Low        | High                       | MODERATE            | MINOR                              |
| Drillship dynamic positioning (DP) (indirect impacts)                                                | -          | 1              | 2           | 3           | 1                | 1                  | 2            | 1           | 4                | 1             | 1                 | 21                    | Low        | High                       | MODERATE            | MINOR                              |
| MODU drilling, wellhead and casing installation (direct underwater noise disturbance)                | -          | 2              | 4           | 4           | 2                | 2                  | 2            | 4           | 4                | 2             | 4                 | 38                    | Low        | High                       | MODERATE            | MINOR                              |
| MODU drilling, wellhead and casing installation (indirect impacts)                                   | -          | 1              | 2           | 3           | 2                | 1                  | 2            | 1           | 4                | 1             | 1                 | 22                    | Low        | High                       | MODERATE            | MINOR                              |
| Discharge of water based fluids and cuttings to seabed (riserless drilling) (direct impacts)         | -          | 1              | 2           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 4                 | 26                    | Low        | High                       | MODERATE            | MINOR                              |
| Discharge of water based fluids and cuttings to seabed (riserless drilling) (indirect impacts)       | -          | 1              | 2           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 4                 | 21                    | Low        | High                       | MODERATE            | MINOR                              |
| Discharge of water based fluids and cuttings near sea surface (drilling with riser) (direct impacts) | -          | 4              | 4           | 2           | 2                | 2                  | 2            | 1           | 1                | 1             | 4                 | 35                    | Low        | High                       | MODERATE            | MINOR                              |
| Discharge of water based fluids and                                                                  | -          | 1              | 8           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 4                 | 33                    | Low        | High                       | MODERATE            | MINOR                              |

| Impacts on marine mammals                                                           |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                    |       |
|-------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|------------------------------------|-------|
| Project Activities / Elements                                                       | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Significance |       |
| cuttings near sea surface (drilling with riser) (indirect impacts)                  |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                    |       |
| Cement discharges at seabed (direct impacts)                                        | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 4                 | 24                    | Low                        | High                | MODERATE                           | MINOR |
| Cement discharges at seabed (indirect impacts)                                      | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 4                 | 19                    | Negligible                 | High                | MINOR                              | MINOR |
| Cement discharges near sea surface from tank wash out (direct impacts)              | -          | 1              | 2           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 4                 | 26                    | Low                        | High                | MODERATE                           | MINOR |
| Cement discharges near sea surface from tank wash out (indirect impacts)            | -          | 1              | 2           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 4                 | 21                    | Low                        | High                | MODERATE                           | MINOR |
| Pipe dope use during drilling (direct impacts)                                      | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 1                 | 21                    | Low                        | High                | MODERATE                           | MINOR |
| Pipe dope use during drilling (indirect impacts)                                    | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 1           | 1                | 1             | 1                 | 17                    | Negligible                 | High                | MINOR                              | MINOR |
| Testing of MODU blowout preventer (discharges) (indirect impacts)                   | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 1           | 1                | 1             | 1                 | 17                    | Negligible                 | High                | MINOR                              | MINOR |
| Testing of MODU blowout preventer (discharges) (direct impacts)                     | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 1                 | 21                    | Low                        | High                | MODERATE                           | MINOR |
| Discharge of sanitary waste from MODU and support/supply vessels (direct impacts)   | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                              | MINOR |
| Discharge of sanitary waste from MODU and support/supply vessels (indirect impacts) | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                              | MINOR |
| Discharge of food waste from MODU and support/supply vessels (direct impacts)       | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                              | MINOR |
| Discharge of food waste from MODU and support/supply vessels (indirect impacts)     | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                              | MINOR |
| Desalination unit discharges from MODU (direct impacts)                             | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                              | MINOR |

| Impacts on marine mammals                                                                                                                   |                                                                                |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     | Final Residual Impact Significance |
|---------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|------------------------------------|
| Project Activities / Elements                                                                                                               | Nature (S)                                                                     | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |                                    |
| Desalination unit discharges from MODU (indirect impacts)                                                                                   | -                                                                              | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                              |
| Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels (direct impacts)   | -                                                                              | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                              |
| Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels (indirect impacts) | -                                                                              | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                              |
| Uplift and discharge of cooling water from MODU (direct impacts)                                                                            | -                                                                              | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                              |
| Uplift and discharge of cooling water from MODU (indirect impacts)                                                                          | -                                                                              | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                              |
| Discharge of ballast from MODU and support/supply vessels (direct impacts)                                                                  | -                                                                              | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                              |
| Discharge of ballast from MODU and support/supply vessels (indirect impacts)                                                                | -                                                                              | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                              |
| Vertical seismic profile (VSP) activities (direct underwater noise disturbance)                                                             | -                                                                              | 4              | 4           | 4           | 2                | 2                  | 2            | 4           | 2                | 2             | 4                 | 42                    | Low        | High                       | SIGNIFICANT         | MODERATE                           |
| Vertical seismic profile (VSP) activities (indirect impacts)                                                                                | -                                                                              | 2              | 4           | 4           | 2                | 1                  | 2            | 1           | 2                | 1             | 1                 | 28                    | Low        | High                       | SIGNIFICANT         | MODERATE                           |
| Support activities (movement of support vessels)                                                                                            | Please refer to MODU safety exclusion zone and support/supply vessel transfers |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |                                    |
| Lighting from MODU (direct impacts)                                                                                                         | -                                                                              | 1              | 2           | 4           | 1                | 1                  | 1            | 4           | 4                | 1             | 1                 | 24                    | Low        | High                       | MODERATE            | MINOR                              |
| Lighting from MODU (indirect impacts)                                                                                                       | -                                                                              | 1              | 1           | 2           | 1                | 1                  | 1            | 1           | 4                | 1             | 1                 | 17                    | Negligible | High                       | MINOR               | MINOR                              |
| Chemical use and storage (direct impacts)*                                                                                                  | -                                                                              | 1              | 1           | 2           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 18                    | Negligible | High                       | MINOR               | MINOR                              |



| Impacts on marine mammals                                                  |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |                                    |
|----------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|------------------------------------|
| Project Activities / Elements                                              | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance | Final Residual Impact Significance |
| Chemical use and storage (indirect impacts)*                               | -          | 1              | 1           | 2           | 1                | 1                  | 2            | 1           | 1                | 1             | 1                 | 15                    | Negligible | High                       | MINOR               | MINOR                              |
| Radioactive source use and storage (direct impacts)*                       | -          | 1              | 1           | 2           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 18                    | Negligible | High                       | MINOR               | MINOR                              |
| Radioactive source use and storage (indirect impacts)*                     | -          | 1              | 1           | 2           | 1                | 1                  | 2            | 1           | 1                | 1             | 1                 | 15                    | Negligible | High                       | MINOR               | MINOR                              |
| ROV operation (direct impacts)                                             | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                              |
| ROV operation (indirect impacts)                                           | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                              |
| Logistics base drainage (discharge of rainwater runoff) (direct impacts)   | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                              |
| Logistics base drainage (discharge of rainwater runoff) (indirect impacts) | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                              |

\*Notes: though it is appreciated radioactive storage and chemical use may induce long-term irreversible impacts to marine mammals, under standard operational conditions significant discharge of such materials is not envisaged. Such that there is deemed to be limited potential for interaction with marine mammals when best practice storage procedures are implemented.

#### 10.1.5.2.4.3 Demobilisation and abandonment phase

The demobilisation and abandonment phase has the potential to induce impacts to marine mammals through the following principal pathways: underwater noise, physical presence and associated spatial disturbance/elevated collision risk, discharges and subsequent impacts through changes in water quality, toxicity and bioaccumulation and indirect impacts through changes in prey availability etc.

During the demobilisation and abandonment phase, there will be localised spatial disturbance within the Block area associated with the removal of temporary infrastructure, surface handling operations and demobilisation of the MODU.

The impacts to marine mammals consequent of elevations in vessel presence (including MODU) and associated underwater noise impacts are outlined in Section **Error! Reference source not found..** It is acknowledged that the demobilisation and abandonment phase will be short in (approximately 10d) with only temporary impacts envisaged. Furthermore, this will occur in tandem with the cessation of drilling activities and other noisy activities associated with prior phases. Additionally, species are expected to be habituated to the pre-existing vessel presence within the Block area consequent of earlier phases. Following the cessation of works, individuals are expected to return to the Block area in relatively short timeframes. Following demobilisation, disturbance from Project vessels and activities will cease and conditions are expected to return towards baseline.

Impacts with regard to discharges to the marine environment are discussed in Section **Error! Reference source not found.** There is potential that marine discharges associated with demobilisation may impact local water quality and infer indirect impacts to marine mammals. Marine mammals are highly mobile species; individuals are not expected to remain within discharge zones for any significant length of time. In addition, as noted, within an open ocean environment, discharged fluids are anticipated to rapidly disperse and dilute. As such there is limited for potential for toxicity impacts to species that would impact the integrity of species populations over the course of the drilling programme. Any impacts that do occur to marine mammals and other megafauna and their prey species are expected to be limited, with rapid recovery expected once individuals exit the discharge zone.

Well plugging is unlikely to infer significant impacts to marine mammals attributed to water depth, discharge volumes and likelihood of marine mammals overlapping with such zones of influence. However, noting the dive depth of certain species, overlap may be possible for deep diving species. As a result, there may be localised declines in water quality with potential to result in indirect impacts through changes in prey availability. However as detailed in preceding sections, significant implications to foraging success is not expected attributed to sufficient additional habitat and prey options available to individuals.

Overall, the impacts are characterised by negligible impact magnitude (IN=1), confined to the project footprint (EX=1), occurring immediately or in the short term (MO=2-4), temporary (PE=1-2), reversible to readily reversible (RV=1-2), with limited synergistic effects (SI=1-2), direct or indirect depending on the activity (EF=1-4), irregular to intermittent (PR=1-4), with immediate to short-term recovery (MC=1-2), and generally non-cumulative to weakly cumulative (AC=1-4). Considering the high sensitivity of the valued receptor, all identified impacts are assessed as **minor** in significance. Following the implementation of the prevention and mitigation measures described in Chapter 11 of this ESIA, residual impacts are also expected to remain **minor**.

| Impacts on marine mammals                                                              |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|----------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                                                          | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| Cement plug installation and abandonment (direct impacts)                              | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 2             | 1                 | 20                    | Negligible | High                       | MINOR               |
| Cement plug installation and abandonment (indirect impacts)                            | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 1           | 1                | 1             | 1                 | 17                    | Negligible | High                       | MINOR               |
| MODU circulation and surface handling operations (direct underwater noise disturbance) | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 4                 | 20                    | Negligible | High                       | MINOR               |
| MODU circulation and surface handling operations (direct spatial disturbance)          | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 2                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               |
| MODU circulation and surface handling operations (direct discharges impacts)           | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               |
| MODU circulation and surface                                                           | -          | 1              | 1           | 3           | 2                | 1                  | 2            | 1           | 4                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               |

| Impacts on marine mammals                                     |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|---------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                                 | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| handling operations (indirect impacts)                        | -          |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
| Removal of temporary subsea infrastructure (direct impacts)   | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               |
| Removal of temporary subsea infrastructure (indirect impacts) | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 4                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               |
| ROV post operation seabed survey (direct impacts)             | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               |
| ROV post operation seabed survey (indirect impacts)           | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               |

### 10.1.5.2.5 Sea turtles

#### 10.1.5.2.5.1 Drilling preparation and mobilisation phase

The mobilisation of the MODU (Stena DrillMAX) via self-propulsion to Block 2 and any associated support / supply vessels has the potential to induce temporary spatial disturbance to sea turtles, eliciting behavioural disturbance and potential collision risk. Such behavioural disturbance may include evasive manoeuvres (i.e., diving or changes in swimming direction). The capacity of sea turtles to induce evasive behaviour is largely dependent on vessel speed (Hazel et al., 2007).

Turtles spend 20 to 30% of their time at the sea surface for respiration, basking, feeding, orientation and feeding (Lutcavage et al., 2017). Studies show that coastal zones in particular can be hotspots for vessel strikes with evidence from strandings in Florida indicating that inlets and channels associated with ports are of particular concern (Welsh and Witherington 2023). Vessel strikes are a documented cause of mortality in sea turtles, with collisions potentially occurring with vessels of all sizes. As for marine mammals, tanker / cargo vessels may be the most common vessel whereby collisions occur for sea turtles (Laist et al., 2001). A reduced vessel speed is proven to significantly reduce the risk of collision to marine megafauna species, including sea turtles. At speeds faster than 2 knots, some turtles will flee an approaching vessel, but most will not avoid a collision (Hazel et al., 2007; Schoeman et al., 2020). However, it is noted that overall, the drilling preparation and mobilisation phase is temporary and short in duration (< 15d), with vessel transit limited to 2-6 days. A single MODU is not expected to significantly increase spatial disturbance to sea turtles when considered in the context of pre-existing vessel traffic within the Ionian Sea, where well defined shipping corridors already exist, though due to the sensitivity of receptors a precautionary approach will be taken with regard to the impact assessment.

Disturbance may further be induced from elevations in underwater noise attributed to mobilisation of the MODU and associated support / supply vessels. Sea turtle sensitivity to underwater noise is largely poorly understood. It is assumed at the time of writing that sea turtles hearing is more similar to that of fish species, compared to marine mammal sensitivity. To assess the sensitivity of sea turtles to underwater noise

generated by the Project, an underwater acoustic modelling was undertaken under representative operational hydrodynamic conditions.

It is acknowledged that species most likely to overlap with project activities, most notably coastal transit of vessels, or whereby zones of influence may overlap with more coastal areas, include the green (*Chelonia mydas*) and loggerhead (*Caretta caretta*) turtle.

It is estimated that during the approximately 7-hour transit of a platform supply vessel, from the Port of Igoumenitsa to Block 2 at an open-water maximum speed of 14 knots, an individual animal experiences a brief pass-by exposure (0.5 to 1 hour). The threshold for aversive behavioural for sea turtles (170 dBrms) is predicted to reach a distance of 91 m. Upon arrival at the project site or at the port of Igoumenitsa, as the vessel is assumed to reduce speed (4 knots) for manoeuvring, this behavioural response zone reduces to 31 m. As a result, only highly localised impact ranges are predicted during the drilling preparation and mobilisation phase.

Any indirect impacts consequent of changes in prey availability is not foreseen to significantly impact sea turtles in the vicinity of the project. Sea turtles forage over large areas, with the Block not identified from the available baseline information as an important concentration area for foraging or nesting, although individuals may transit through or forage within the wider area. There is considered to be sufficient additional habitat available in the Ionian Sea and wider Mediterranean, with loggerheads primarily documented foraging in neritic grounds along the Tunisian shelf and Adriatic Sea, and green turtles in the eastern Mediterranean.

Support/ supply vessels may transit through the Nisoi Paxoi Kai Antipaxoi Kai Evryteri Thalassia Periochi (GR2230003), designated for green and loggerhead turtle; the site is specifically noted for nesting behaviour for loggerhead turtles. It is appreciated the South Adriatic Ionian Strait EBSA noted provisioning habitats for loggerhead turtles. Vessel movements associated with the Project represent a temporary and limited addition to the existing shipping activity within the Ionian Sea. Project vessels will follow established transit routes and implement the relevant vessel management and fauna protection measures, including operating at speeds not exceeding 14 knots (or lower where operationally required), maintaining appropriate stand-off distances from observed sea turtles, and avoiding unnecessary disturbance where safe and practicable. Consequently, the temporary increase in vessel traffic is not expected to result in significant disturbance to sea turtles.

In summary, with regard to their significance, impacts expected on sea turtles during the mobilisation phase are assessed as **negative** (–) for all activities, with negligible impact magnitude (IN=1), confined to the project footprint (EX=1), occurring immediately (MO=4), temporary (PE=1), readily reversible (RV=1), with limited synergistic effects (SI=2), direct or indirect depending on the impact pathway (EF=4), irregular (PR=1), with immediate recovery (MC=1), and non-cumulative (AC=1). Considering the high sensitivity of the valued receptor, all identified impacts are assessed as **minor** in significance. Following the implementation of the prevention and mitigation measures described in Chapter 11 of this ESIA, residual impacts are expected to remain **minor**. Please refer to the table below for the detailed impact quantification by activity for the mobilisation phase.

| Impacts on sea turtles                                                                     |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|--------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                                                              | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| Mobilisation of MODU to well site – power generation (direct spatial disturbance)          | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               |
| Mobilisation of MODU to well site – power generation (direct underwater noise disturbance) | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               |
| Mobilisation of MODU to well site – power generation (indirect impacts)                    | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               |

#### 10.1.5.2.5.2 Exploration drilling operations phase

During the exploration drilling and operations phase, underwater noise and spatial disturbance is the greatest concern for sea turtles, though additional pathways may exist from discharges into the marine environment.

The physical presence of the MODU and transit of vessels is not envisaged to induce significant spatial disturbance over the course of the exploration drilling operations phase. This is attributed to pre-existing vessel traffic within the Ionian Sea, alongside overall low likelihood of significant overlap of individuals with the offshore project location. The Block location is envisaged as more of a transit route for individuals, with only transient presence anticipated.

Elevations in underwater noise will arise from MODU drilling activities, MODU operation, support / supply vessel operations (including DP) and VSP activities during this phase. Impacts may arise in the form of behavioural disturbance (i.e., masking) or direct injury. Underwater noise modelling (see Section 6.12.3.4) has also been undertaken for the VSP and drilling activities, alongside noise generated from vessel movements.

While each VSP operation is allocated a 12-hour survey window for tool deployment and testing, the active airgun discharge is limited to approximately 130 shots per well section, at 15-second firing intervals. This results in an active firing duration of approximately 32.5 minutes (0.5 hours) per section, with a contingency envelope evaluated up to 1.0 or 2.0 hours. Over these time periods of VSP airgun arrays, mortality (210 dB SEL) for sea turtles is predicted 135 m for 0.5, 147 m (Summer Mean) for 1 h, and 259 m (Summer Mean) for 2 h, whilst the SPLpeak is predicted at 125 m. With regards to the sea turtles aversive behaviour (175dB) occurrence it is predicted at maximum 295 m.

Drilling activities will take place directly within the South Adriatic Ionian Strait EBSA. Drilling noise is a continuous, low frequency sound. Only localised impact areas were concluded for sea turtles in relation to aversive behaviour (30m maximum distance).

As identified in Section **Error! Reference source not found.**, vessel noise further has potential to induce disturbance to sea turtles, specifically when intra-cumulative impacts may arise (i.e., when drilling, vessel movement and VSP may occur concurrently) and zones of influences spatially overlap. However, only relatively localised impact areas were concluded for support / supply vessel movements when compared to other marine megafauna species (i.e., low frequency cetacean species).

Discharges to the marine environment may cause temporary and localised changes in water quality, which may indirectly affect sea turtles through temporary effects on prey availability. Sea turtles will be most sensitive to discharges to the water column over the seabed (i.e., riser drilling discharges, cement discharges, wastewater, drainage water, cooling water and ballast); significant overlap with discharge plumes of discharges at the seabed is not envisaged noting water depth and expected dive depth of species. Drill cuttings dispersion modelling concluded that suspended material may be transported away from the discharge location under the influence of prevailing currents, with the plume extent varying according to seasonal oceanographic conditions. For the physical presence of suspended drill cuttings in the water column, a Predicted No Effect Concentration (PNEC) of 100,000 ppb (equivalent to 100 mg/L) has been applied as a screening threshold within the ERMS/DREAM risk-assessment framework. Elevated concentrations of discharged elements and compounds (such as calcium carbonate) are predicted to be temporary, with environmental risk diminishing rapidly following termination of discharge activities due to dispersion and dilution processes within the open marine environment (see Section **Error! Reference source not found.** & 10.1.4.5).

Metals within drilling fluids exhibit an overall very low bioavailability to marine animals, including sea turtles; bioaccumulation has however been document in barium sulphate (barite) albeit with levels not high enough to harm species (Neff et al., 1987), and it is an inert compound. This in combination with limited duration of exposure risk, concludes limited pathways for impacts to sea turtles to occur. Cement discharges are expected to be of low volumes and only occurring over short discharge durations. Noting the proposed well locations, it is unlikely that sea turtles will overlap significantly with offshore discharge plumes (i.e., drill cuttings discharges), however noting worst-case distances associated with drill cuttings dispersion, overlap of individuals is plausible, if only for short durations during migration. Routine discharges may occur during vessel transit; however all discharges will be under relevant best practice and performance standards.

Discharged fluids are anticipated to rapidly disperse and dilute. As such there is limited for potential for toxicity impacts to species that would impact the integrity of species populations over the course of the drilling programme. Any impacts that do occur to sea turtles and their prey species are expected to be acute, with rapid recovery expected once individuals exit the discharge zone. It is acknowledged as stated within Chapter 4, that no planned discharge of radioactive material is predicted, based on embedded mitigation, no residual risk to sea turtles consequent of radioactive exposure is envisaged.

Marine turtle behaviour may be altered through artificial light impacts, or through predator prey relations. While impacts to turtle nesting behaviour is noted, acknowledging the distance from shore of the MODU, no coastal impacts are envisaged. Sea turtle exposure to artificial light associated with drilling is expected to be limited, noting the transient nature of individuals within the Block location, the mobile nature of individuals and short duration of the drilling campaign (maximum duration of 90 days).

Any indirect impacts consequent of changes in prey availability is not foreseen to significantly impact sea turtles in the vicinity of the project. Sea turtles forage over large areas, with the Block area unlikely to



represent a key foraging area for individuals, noting earlier preferred foraging grounds of individuals (Section **Error! Reference source not found.**).

In addition, spatial disturbance and underwater noise impacts consequent of ROV operation is not anticipated to induce significant impacts to sea turtles. Such surveying is expected to be negligible when considered in the wider context of project activities, i.e., disturbance from drilling, VSP vessel presence, etc.

As within Section **Error! Reference source not found.**, the extent of an impact has been upgraded for certain activities where transit routes and impact zones of influences (based on modelling outcomes) may overlap with Natura 2000 sites designated for sea turtles.

It is expected for the purpose of noisy activities (most impulsive noise sources [VSP activities]) that a marine mammal (and other megafauna) mitigation plan will be developed and implemented as appropriate. The plan will define the applicable mitigation measures, taking account of relevant ACCOBAMS guidance and regulatory requirements.. The plan will further consider other megafauna species, including sea turtles due to sensitivity of the receptor. During VSP activities specifically, soft-start procedures will be implemented and visual monitoring of marine megafauna, including sea turtles by a dedicated marine megafauna observer will take place within a 500 m visual zone prior to the commencement of noisy works. Such measures have been considered as part of project design/embedded mitigation.

In addition, vessel speeds may be reduced as much as reasonably practicable when transiting through the the Nisoi Paxoi Kai Antipaxoi Kai Evryteri Thalassia Periochi (GR2230003) Natura 2000 site and the EBSA site. Applicable legal requirements and relevant Project-adopted good-practice measures will be implemented.

With regard to discharges, it is further assumed that all relevant best practices (i.e., development of Waste/Chemical Management Plans, adherence to Greek and international legal frameworks, low toxicity/low bioaccumulation potential chemicals to be used, etc.) will be implemented, where technically suitable. As above, such measures have been considered as part of project design/embedded mitigation. No planned discharge from the MODU or Project vessels shall be made if at any point a vessel is within the Ionian Archipelago IMMA or the Nisoi Paxoi Kai Antipaxoi Kai Evryteri Thalassia Periochi (GR2230003) Natura 2000 site.

In summary, with regard to their significance, impacts expected on sea turtles during the exploration drilling operations phase are assessed as negative (–) for all activities. The impacts range from negligible to low in magnitude (IN=1–4), extending from the project footprint to transboundary scales where relevant (EX=1–8), occurring immediately or in the short term (MO=2–4), temporary (PE=1–2), reversible to readily reversible (RV=1–2), with limited synergistic effects (SI=1–2), direct or indirect depending on the impact pathway (EF=1–4), irregular to continuous (PR=1–4), with immediate to short-term recovery (MC=1–2), and non-cumulative to cumulative (AC=1–4). Considering the high sensitivity of the valued receptor, **Significant** impacts are predicted for direct and indirect underwater noise associated with Vertical Seismic Profiling (VSP) activities, reflecting the sensitivity of sea turtles to impulsive underwater noise. **Moderate** impacts are associated with drillship dynamic positioning, MODU drilling and wellhead/casing installation, discharges of drilling fluids and cuttings, cement discharges, pipe dope use, blowout preventer testing, and lighting from the MODU. The remaining activities are assessed as **Minor** due to their localized, temporary and reversible nature. Following the implementation of the prevention and mitigation measures described in Chapter 11 of this ESIA, residual impacts are reduced to **Moderate** for VSP activities and **Minor** for all remaining activities.



Please refer to the table below for the detailed impact quantification by activity for the exploration drilling operations phase.

| Impacts on sea turtles                                                                               |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |                                    |
|------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|------------------------------------|
| Project Activities / Elements                                                                        | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance | Final Residual Impact Significance |
| MODU safety exclusion zone and support/supply vessel transfers (direct spatial disturbance)          | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               | MINOR                              |
| MODU safety exclusion zone and support/supply vessel transfers (direct underwater noise disturbance) | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               | MINOR                              |
| MODU safety exclusion zone and support/supply vessel transfers (indirect impacts)                    | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                              |
| Drillship dynamic positioning (DP) (direct impacts)                                                  | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 4                | 1             | 4                 | 28                    | Low        | High                       | MODERATE            | MINOR                              |
| Drillship dynamic positioning (DP) (indirect impacts)                                                | -          | 1              | 2           | 3           | 1                | 1                  | 2            | 1           | 4                | 1             | 1                 | 21                    | Low        | High                       | MODERATE            | MINOR                              |
| MODU drilling, wellhead and casing installation (direct underwater noise disturbance)                | -          | 2              | 4           | 4           | 2                | 2                  | 2            | 4           | 4                | 2             | 4                 | 38                    | Low        | High                       | MODERATE            | MINOR                              |
| MODU drilling, wellhead and casing installation (indirect impacts)                                   | -          | 1              | 2           | 3           | 2                | 1                  | 2            | 1           | 4                | 1             | 1                 | 22                    | Low        | High                       | MODERATE            | MINOR                              |
| Discharge of water based fluids and cuttings to seabed (riserless drilling) (direct impacts)         | -          | 1              | 2           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 4                 | 26                    | Low        | High                       | MODERATE            | MINOR                              |
| Discharge of water based fluids and cuttings to seabed (riserless drilling) (indirect impacts)       | -          | 1              | 2           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 4                 | 21                    | Low        | High                       | MODERATE            | MINOR                              |
| Discharge of water based fluids and cuttings near sea surface (drilling with riser) (direct impacts) | -          | 4              | 4           | 2           | 2                | 2                  | 2            | 1           | 1                | 1             | 4                 | 35                    | Low        | High                       | MODERATE            | MINOR                              |
| Discharge of water based fluids and                                                                  | -          | 1              | 8           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 4                 | 33                    | Low        | High                       | MODERATE            | MINOR                              |

| Impacts on sea turtles                                                              |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |                                    |
|-------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|------------------------------------|
| Project Activities / Elements                                                       | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance | Final Residual Impact Significance |
| cuttings near sea surface (drilling with riser) (indirect impacts)                  | -          |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |                                    |
| Cement discharges at seabed (direct impacts)                                        | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 4                 | 24                    | Low        | High                       | MODERATE            | MINOR                              |
| Cement discharges at seabed (indirect impacts)                                      | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 4                 | 19                    | Negligible | High                       | MINOR               | MINOR                              |
| Cement discharges near sea surface from tank wash out (direct impacts)              | -          | 1              | 2           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 4                 | 26                    | Low        | High                       | MODERATE            | MINOR                              |
| Cement discharges near sea surface from tank wash out (indirect impacts)            | -          | 1              | 2           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 4                 | 21                    | Low        | High                       | MODERATE            | MINOR                              |
| Pipe dope use during drilling (direct impacts)                                      | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 1                 | 21                    | Low        | High                       | MODERATE            | MINOR                              |
| Pipe dope use during drilling (indirect impacts)                                    | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 1           | 1                | 1             | 1                 | 17                    | Negligible | High                       | MINOR               | MINOR                              |
| Testing of MODU blowout preventer (discharges) (indirect impacts)                   | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 1           | 1                | 1             | 1                 | 17                    | Negligible | High                       | MINOR               | MINOR                              |
| Testing of MODU blowout preventer (discharges) (direct impacts)                     | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 1                 | 21                    | Low        | High                       | MODERATE            | MINOR                              |
| Discharge of sanitary waste from MODU and support/supply vessels (direct impacts)   | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                              |
| Discharge of sanitary waste from MODU and support/supply vessels (indirect impacts) | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                              |
| Discharge of food waste from MODU and support/supply vessels (direct impacts)       | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                              |
| Discharge of food waste from MODU and support/supply vessels (indirect impacts)     | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                              |
| Desalination unit discharges from MODU (direct impacts)                             | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                              |

| Impacts on sea turtles                                                                                                                      |                                                                                |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|------------------------------------|
| Project Activities / Elements                                                                                                               | Nature (S)                                                                     | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance | Final Residual Impact Significance |
| Desalination unit discharges from MODU (indirect impacts)                                                                                   | -                                                                              | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                              |
| Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels (direct impacts)   | -                                                                              | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                              |
| Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels (indirect impacts) | -                                                                              | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                              |
| Uplift and discharge of cooling water from MODU (direct impacts)                                                                            | -                                                                              | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                              |
| Uplift and discharge of cooling water from MODU (indirect impacts)                                                                          | -                                                                              | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                              |
| Discharge of ballast from MODU and support/supply vessels (direct impacts)                                                                  | -                                                                              | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                              |
| Discharge of ballast from MODU and support/supply vessels (indirect impacts)                                                                | -                                                                              | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                              |
| Vertical seismic profile (VSP) activities (direct underwater noise disturbance)                                                             | -                                                                              | 4              | 4           | 4           | 2                | 2                  | 2            | 4           | 2                | 2             | 4                 | 42                    | Low        | High                       | SIGNIFICANT         | MODERATE                           |
| Vertical seismic profile (VSP) activities (indirect impacts)                                                                                | -                                                                              | 2              | 4           | 4           | 2                | 1                  | 2            | 1           | 2                | 1             | 1                 | 28                    | Low        | High                       | SIGNIFICANT         | MODERATE                           |
| Support activities (movement of support vessels)                                                                                            | Please refer to MODU safety exclusion zone and support/supply vessel transfers |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |                                    |
| Lighting from MODU (direct impacts)                                                                                                         | -                                                                              | 1              | 2           | 4           | 1                | 1                  | 1            | 4           | 4                | 1             | 1                 | 24                    | Low        | High                       | MODERATE            | MINOR                              |
| Lighting from MODU (indirect impacts)                                                                                                       | -                                                                              | 1              | 1           | 2           | 1                | 1                  | 1            | 1           | 4                | 1             | 1                 | 17                    | Negligible | High                       | MINOR               | MINOR                              |
| Chemical use and storage (direct impacts)*                                                                                                  | -                                                                              | 1              | 1           | 2           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 18                    | Negligible | High                       | MINOR               | MINOR                              |

| Impacts on sea turtles                                                     |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     | Final Residual Impact Significance |
|----------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|------------------------------------|
| Project Activities / Elements                                              | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance |                                    |
| Chemical use and storage (indirect impacts)*                               | -          | 1              | 1           | 2           | 1                | 1                  | 2            | 1           | 1                | 1             | 1                 | 15 Negligible         | High                       | MINOR               | MINOR                              |
| Radioactive source use and storage (direct impacts)*                       | -          | 1              | 1           | 2           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 18 Negligible         | High                       | MINOR               | MINOR                              |
| Radioactive source use and storage (indirect impacts)*                     | -          | 1              | 1           | 2           | 1                | 1                  | 2            | 1           | 1                | 1             | 1                 | 15 Negligible         | High                       | MINOR               | MINOR                              |
| ROV operation (direct impacts)                                             | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19 Negligible         | High                       | MINOR               | MINOR                              |
| ROV operation (indirect impacts)                                           | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16 Negligible         | High                       | MINOR               | MINOR                              |
| Logistics base drainage (discharge of rainwater runoff) (direct impacts)   | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19 Negligible         | High                       | MINOR               | MINOR                              |
| Logistics base drainage (discharge of rainwater runoff) (indirect impacts) | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16 Negligible         | High                       | MINOR               | MINOR                              |

\*Notes: though it is appreciated radioactive storage and chemical use may induce long-term irreversible impacts to sea turtles, under standard operational conditions significant discharge of such materials is not envisaged. Such that there is deemed to be limited potential for interaction with marine mammals when best practice storage procedures are implemented.

#### 10.1.5.2.5.3 Demobilisation and abandonment phase

During the demobilisation and abandonment phase, there will be localised spatial disturbance within the Block area in association with the removal of temporary infrastructure, surface handling operations and demobilisation of the MODU.

Impacts regarding underwater noise and vessel presence (including MODU transit) is outlined in Section **Error! Reference source not found..** It is acknowledged that the demobilisation and abandonment phase will be short in (approximately 10d) only temporary impacts envisaged. Furthermore, this will occur in tandem with the cessation of drilling activities and other noisy activities associated with prior phases. Additionally, species are expected to be habituated to the pre-existing vessel presence within the Block area consequent of earlier phases. Following demobilisation, disturbance from Project vessels and activities will cease and conditions are expected to return towards baseline. As such once full demobilisation has occurred, a positive impact may be concluded, though noting the limited footprint of the project, this is expected to be negligible in the wider context of the Ionian Sea.

There may further be discharges associated with MODU demobilisation and circulation, impacts are parallel to those discussed in Section **Error! Reference source not found..** No planned discharge from the MODU or Project vessels shall be made if at any point a vessel is within the Ionian Archipelago IMMA or the Nisoi Paxoi Kai Antipaxoi Kai Evryteri Thalassia Periochi (GR2230003) Natura 2000 site.

Well plugging is highly unlikely to induce significant impacts to sea turtles attributed to water depth and dive depth of individuals.

In summary, with regard to their significance, impacts expected on sea turtles during the demobilisation and abandonment phase are assessed as negative (–) for all activities. As with the previous phases, the potential for vessel transit through sensitive sea turtle areas during demobilisation has been reflected in the assessment of impact extent where relevant. Overall, the impacts are characterised by negligible impact magnitude (IN=1), confined to the project footprint (EX=1), occurring immediately or in the short term (MO=2–4), temporary (PE=1–2), reversible to readily reversible (RV=1–2), with limited synergistic effects (SI=1–2), direct or indirect depending on the impact pathway (EF=1–4), irregular to intermittent (PR=1–4), with immediate to short-term recovery (MC=1–2), and generally non-cumulative to weakly cumulative (AC=1–4). In relation to vessel transit through the Nisoi Paxoi Kai Antipaxoi Kai Evryteri Thalassia Periochi (GR2230003) Natura 2000 site and the South Adriatic Ionian Strait EBSA, the mitigation measures described in Section 10.1.5.2.5.1 will be implemented. The temporary and localized nature of the demobilisation activities, together with these mitigation measures, means that all identified impacts are assessed as **minor** in significance. Following the implementation of the prevention and mitigation measures described in Chapter 11 of this ESIA, residual impacts are also expected to remain **minor**. Please refer to the table below for the detailed impact quantification by activity for the demobilisation and abandonment phase.

| Impacts on marine mammals                                                              |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|----------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                                                          | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| Cement plug installation and abandonment (direct impacts)                              | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 2             | 1                 | 20                    | Negligible | High                       | MINOR               |
| Cement plug installation and abandonment (indirect impacts)                            | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 1           | 1                | 1             | 1                 | 17                    | Negligible | High                       | MINOR               |
| MODU circulation and surface handling operations (direct underwater noise disturbance) | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 4                 | 20                    | Negligible | High                       | MINOR               |
| MODU circulation and surface handling operations (direct spatial disturbance)          | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 2                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               |
| MODU circulation and surface handling operations (direct discharges impacts)           | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               |
| MODU circulation and surface handling operations (indirect impacts)                    | -          | 1              | 1           | 3           | 2                | 1                  | 2            | 1           | 4                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               |
| Removal of temporary subsea infrastructure (direct impacts)                            | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               |
| Removal of temporary subsea infrastructure (indirect impacts)                          | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 4                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               |

| Impacts on marine mammals                           |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|-----------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                       | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| ROV post operation seabed survey (direct impacts)   | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               |
| ROV post operation seabed survey (indirect impacts) | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               |

### 10.1.5.3 Avifauna

The main bird groups present in the project area are pelagic seabirds and migratory birds. The overall direct effects by the operations on the avifauna present in the area are expected to be associated with physical presence of vessels and their local temporary changes to the surrounding environment which include the presence of overhead infrastructures (vessels), their artificial lighting and changes of the water quality and seabird prey availability due to their operation (Rinconi et al. 2015).

The presence of overhead infrastructure at sea poses a collision risk to both seabirds and migratory landbirds, which may result in mortality or injuries. This risk is additionally enhanced by the attraction or disorientation effect on birds of the artificial lighting or in the cases of adverse weather conditions that reduce visibility.

For the migratory landbirds, passerine species, most of which migrate in large numbers at night, the collision risk is particularly elevated. Hüppop et al. (Hüppop et al. 2016) have estimated an annual mortality of 150 dead birds, mainly thrushes, European Starlings and other passerines, at a single unmanned tall offshore research platform in the North Sea and a potential cumulative annual mortality of hundreds of thousands of birds at offshore human structures in the North Sea. The attraction of migratory landbirds to artificial lighting at night may cause their circulation around the source of light, leading to exhaustion, energy depletion and potentially death (e.g. Russell et al. 2005). On the other hand, offshore vessels and platforms provide unique offshore resting and roosting sites for migratory landbirds and several seabird species, e.g. gulls and terns. Some migratory landbirds use vessels as stopover sites to rest and recover from fatigue before continuing their migration.

Among seabird species, petrels and shearwaters are considered to be the most susceptible to the adverse effects of the offshore artificial lights at night (ALAN), which include disorientation, attraction and avoidance. In the Mediterranean, light pollution has been associated with strandings of the Yelkouan Shearwater (*Puffinus yelkouan*), Scopoli's Shearwater (*Calonectris diomedea*) in the vicinity of their colonies on Malta, as well as, selection of breeding sites of the European Storm-petrel (*Hydrobates pelagicus*) with reduced light pollution (Laguna et al. 2014). Shearwater and petrel fledglings are inexperienced with the artificial light and are therefore particularly affected by the attraction and disorientation caused by the artificial light (Fontaine et al. 2011, Rodríguez et al. 2017, Austad et al. 2023, Imber et al. 1975). Collision with vessels may occur when seabirds are disoriented by bright vessel lights at night or under adverse weather conditions. Risk of collision with and stranding at sea primarily affects smaller seabird species (petrels) and some large species which may become disoriented (shearwaters) (Rinconi et al. 2015).

The physical presence of vessels could also cause an avoidance effect increasing the energy expenditure for some seabird species, however these effects are considered to be limited due to the temporary Project presence and the existing levels of vessel traffic along shipping routes connecting Greece and Italy and the Adriatic and Ionian Seas.

Artificial lights at night (ALAN) in the marine environment attract plankton, invertebrates and fish (Fobert et al. 2023), therefore the waters in the vicinity of offshore platforms may have increased abundance of seabird prey species and consequently, potentially increased seabird abundance, however the mechanism behind the increase of prey availability is not well understood (Rinconi et al. 2015). Therefore, ALAN may indirectly increase the abundance of seabirds of offshore platforms, resulting in the increased collision risk. However, based on the available data the project area has not been identified as an important seabird foraging area, therefore the temporary and localized presence of vessels, the local changes in the quality of water, prey availability due to ALAN or permitted operational discharges are not considered to have a significant effect on the seabirds in terms of foraging habitat and prey availability and quality, as well as collision risk or displacement.

Helicopter operations may cause disturbance to birds in the area of operation and in extreme cases may lead to bird strikes. In general, bird species most likely to be involved in bird strikes with helicopters include species which are locally present in large numbers or large and heavy birds e.g. vultures, geese, gulls, etc. It is however considered that following standard safety procedures to avoid bird strikes, the risk and impact is minimal.

Provided below are the assessment of impact on avifauna during each of the project phases.

#### 10.1.5.3.1 Drilling preparation and mobilisation phase

The drilling preparation and mobilisation phase has the potential to induce impacts to avifauna through the following principal pathways:

- vessel collisions caused by the physical presence of the vessels and/or artificial light at night (ALAN) at night and in adverse weather conditions,
- increased energy cost leading to exhaustion or starvation due to attraction, avoidance or disorientation by the presence of the vessels and/or artificial light at night (ALAN) in night,
- provision of offshore resting or roosting sites onboard vessels.

The mobilisation of the MODU (Stena DrillMAX) via self-propulsion to Block 2 and any associated support / supply vessels has the potential to induce temporary localized spatial disturbance or alterations to avifauna, which may include, depending on the bird species and individuals, attraction/avoidance of the vessels by their physical presence, as well as, attraction/avoidance/disorientation by vessels' artificial lights at night (ALAN). If the mobilisation of the vessels coincides with the spring or autumn migration periods, the negative impacts may include collisions of migratory birds with the vessels, increased migration energy cost due to attraction/avoidance/disorientation, while positive impacts include provision of additional offshore resting or roosting sites for migratory birds. If the mobilisation of the vessels coincides with the breeding seasons of the pelagic seabird species (from spring until autumn) the impacts may include attraction/avoidance/disorientation of seabirds at night increasing energy cost and in extreme cases



collisions with the vessels, with increased risks during the fledging period of the burrow-nesting seabirds (Scopoli's and Yelkouan Shearwaters, European Storm-petrel).

The location of the onshore logistics / supply base at Igoumenitsa is located in the vicinity Special Protection Area "Ygrotopos ekvolon Kalama kai nisos Prasoudi" (GR2120005) that host numerous breeding, wintering and migratory waterbird, wader, heron/egret, cormorant, raptor, gull/tern and passerine species which may experience temporary disturbance; however, significant effects are not expected given that Project activities will occur within the existing operational port area and represent a temporary addition to established port activity.

In summary, with regard to their significance, the expected impacts on avifauna associated with the drilling preparation and mobilisation phase are assessed as **negative** (-) for the majority of impacts apart from the provision of resting/roosting sites which is assessed as **positive** (+). The above impacts have been considered transboundary because they have an effect on numerous migratory species, as well as, seabird species that are regularly present in the wider area of the Ionian Sea and the Adriatic Sea. The impacts of collision with vessels and increased energy cost/exhaustion/starvation are qualified as **minor**, while the provision of additional resting/roosting sites for migratory birds onboard project vessels is qualified as positive. Please refer to the below table for a breakdown of impact quantification per activity for the drilling preparation and mobilisation phase.

| Impacts on avifauna                                                                                  |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |     |                            |                     |
|------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|-----|----------------------------|---------------------|
| Project Activities / Elements                                                                        | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |     | Valued Receptor Assessment | Impact Significance |
| Mobilisation of MODU to well site – power generation (collisions)                                    | -          | 2              | 8           | 4           | 2                | 1                  | 2            | 4           | 1                | 3             | 1                 | 40                    | Low | Medium                     | MINOR               |
| Mobilisation of MODU to well site – power generation (increased energy cost/ exhaustion/ starvation) | -          | 2              | 8           | 4           | 2                | 1                  | 2            | 4           | 1                | 3             | 1                 | 40                    | Low | Medium                     | MINOR               |
| Mobilisation of MODU to well site – power generation (resting/ roosting sites)                       | +          | 2              | 8           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 37                    | Low | Medium                     | POSITIVE            |

### 10.1.5.3.2 Exploration drilling operations phase

The exploration drilling and operations phase has the potential to induce impacts to avifauna through the following principal pathways:

- vessel collisions caused by the physical presence of the vessels and/or artificial light at night (ALAN) at night and in adverse weather conditions,
- collision risk due to helicopter transfers between heliport and MODU

- increased energy cost leading to exhaustion or starvation due to attraction, avoidance or disorientation by the presence of the vessels and/or artificial light at night (ALAN) at night,
- provision of offshore resting or roosting sites onboard vessels

The exploration drilling involves drilling of a single (1) well. The expected duration of the exploration drilling activity is approximately 57-67 days with the design envelope allowing the maximum duration of up to 90 days. Therefore, the drilling operations, as well as, their direct impacts on avifauna will be temporary and spatially limited to the area around the drilling location and the supply routes of the supply vessels and helicopters.

The physical presence of the MODU and associated support / supply vessels, the MODU drilling operations and the transit of the support/supply vessels have the potential to induce temporary localized spatial disturbance or alterations to avifauna, which may include, depending on the bird species and individuals, attraction/avoidance of the vessels by their physical presence, as well as, attraction/avoidance/disorientation by vessels' artificial lights at night (ALAN). If the operations of the aforementioned vessels during the drilling phase coincide with the spring or autumn migration periods, the negative impacts may include collisions of migratory birds with the vessels, increased migration energy cost due to attraction/avoidance/disorientation, while positive impacts include provision of additional offshore resting or roosting sites for migratory birds. If these operations take place during the breeding seasons of the pelagic seabird species (from spring until autumn), the impacts may include attraction/avoidance/disorientation of seabirds at night increasing energy cost and in extreme cases collisions with the vessels, with increased risks during the fledging period of the burrow-nesting seabirds (Scopoli's and Yelkouan Shearwaters, European Storm-petrel).

Additionally, artificial lighting at night (ALAN) of MODU may temporarily attract seabird prey species to the drilling area, thus potentially temporarily increasing the food availability and consequently the abundance of seabirds in the vicinity of MODU. An increase in the seabird abundance in the vicinity of MODU would increase the risk of seabird collisions with MODU and support/supply vessels in the area.

Helicopter operations during transfers between heliport and MODU will follow the standard safety procedures, therefore the risk of bird strikes as well as the disturbance of bird are considered to be minimal.

The discharges at the seabed and the underwater noise are not expected to have any significant direct or indirect impacts on the birds, because the bird species present in the area either fly or use the sea surface for resting or the sea surface and the very top layer of the water column for catching prey.

Surface discharges of MODU and support vessels, including waste, wastewater, sanitary water, deck drainage, ballast and discharges of the desalination unit, will follow relevant best practice and performance standards, are expected to create a very temporary and minor changes to the water quality and directly or indirectly prey availability for the seabirds that will rapidly disperse and dilute. Therefore, negligible in magnitude and very temporary impacts on seabirds are expected in terms of the water quality and seabird prey availability.

Based on relatively low abundance and density of birds in the drilling area and the remoteness of the area, it is considered unlikely that the abundance of birds at MODU during the drilling operations will increase significantly, because there are numerous other much better-quality roosting and foraging habitats available in the coastal areas of the Ionian Sea. Therefore, the abundance of seabirds at the drilling location due to

changes in the prey availability and the availability of the roosting sites is not expected to change significantly and consequently the significance of expected impacts is not expected to change significantly due to these parameters.

In summary, with regard to their significance, the expected impacts on avifauna associated with the exploration drilling operations phase are assessed as **negative** (-) for the majority of impacts apart from the provision of resting/roosting sites which is assessed as positive (+). The above impacts have been considered transboundary because they have an effect on numerous migratory species, as well as, seabird species that are regularly present in the wider area of the Ionian Sea and the Adriatic Sea. The impacts of collision with vessels and increased energy cost/exhaustion/starvation of the MODU operation during the exploration drilling operations phase are qualified as **moderate**, while the impacts of collision with vessels and increased energy cost/exhaustion/starvation due to the operation of the support/supply vessels are qualified as **minor**. The provision of additional resting/roosting sites for migratory birds onboard MODU and support/supply vessels is qualified as **positive**. Please refer to the below table for a breakdown of impact quantification per activity for the exploration drilling operations phase. It should be noted that the impacts of collision with vessels and increased energy cost/exhaustion/starvation of the MODU and support/supply vessels are associated with both the physical presence and the ALAN of the vessels, therefore the impact quantifications for both have been assessed together but the same quantification has been assigned to both activities/elements.

Following the implementation of prevention and mitigation measures described in Chapter 11 of this ESIA, residual impacts are assessed as **minor**.

| Impacts on avifauna                                                                                                               |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |        |                            |                     |                                  |
|-----------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|--------|----------------------------|---------------------|----------------------------------|
| Project Activities / Elements                                                                                                     | Nature (S) | Intensity (IN) | Extent (Ex) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |        | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
| MODU safety exclusion zone and support/supply vessel transfers – power generation (collisions)                                    | -          | 2              | 8           | 4           | 2                | 1                  | 2            | 4           | 2                | 3             | 1                 | 41                    | Medium | Medium                     | MODERATE            | MINOR                            |
| MODU safety exclusion zone and support/supply vessel transfers – power generation (increased energy cost/ exhaustion/ starvation) | -          | 2              | 8           | 4           | 2                | 1                  | 2            | 4           | 2                | 3             | 1                 | 41                    | Medium | Medium                     | MODERATE            | MINOR                            |
| MODU safety exclusion zone and support/supply vessel transfers – power generation (resting/ roosting sites)                       | +          | 4              | 8           | 4           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 44                    | Medium | Medium                     | MODERATE            | POSITIVE                         |
| Lighting from MODU (collisions)                                                                                                   | -          | 4              | 8           | 4           | 2                | 1                  | 2            | 4           | 4                | 3             | 1                 | 49                    | Medium | Medium                     | MODERATE            | MINOR                            |

| Impacts on avifauna                                                                              |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |        |                            |                     |                                  |
|--------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|--------|----------------------------|---------------------|----------------------------------|
| Project Activities / Elements                                                                    | Nature (S) | Intensity (IN) | Extent (Ex) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |        | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
| Lighting from MODU (increased energy cost/ exhaustion/ starvation)                               | -          | 4              | 8           | 4           | 2                | 1                  | 2            | 4           | 4                | 2             | 1                 | 48                    | Medium | Medium                     | MODERATE            | MINOR                            |
| Helicopter transfers between heliport and MODU (collisions)                                      | -          | 2              | 8           | 4           | 1                | 1                  | 2            | 4           | 2                | 1             | 1                 | 38                    | Low    | Medium                     | MINOR               | MINOR                            |
| Support activities (movement of support vessels) (collisions)                                    | -          | 2              | 8           | 4           | 2                | 1                  | 2            | 4           | 1                | 3             | 1                 | 40                    | Low    | Medium                     | MINOR               | MINOR                            |
| Support activities (movement of support vessels) (increased energy cost/ exhaustion/ starvation) | -          | 2              | 8           | 4           | 2                | 1                  | 2            | 4           | 1                | 2             | 1                 | 39                    | Low    | Medium                     | MINOR               | MINOR                            |
| Support activities (movement of support vessels) (resting/ roosting sites)                       | +          | 2              | 8           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 37                    | Low    | Medium                     | MINOR               | POSITIVE                         |

#### 10.1.5.3.3 Demobilisation and abandonment phase

The demobilisation and abandonment phase has the potential to induce impacts to avifauna through the following principal pathways:

- vessel collisions caused by the physical presence of the vessels and/or artificial light at night (ALAN) at night and in adverse weather conditions,
- increased energy cost leading to exhaustion or starvation due to attraction, avoidance or disorientation by the presence of the vessels and/or artificial light at night (ALAN) in night,
- provision of offshore resting or roosting sites onboard vessels.

During the demobilisation and abandonment phase, there will be localised spatial disturbance within the Block area associated with the removal of temporary infrastructure, surface handling operations and demobilisation of the MODU. Therefore, only temporary and spatially localized impacts are expected.

Following the termination of drilling operations the MODU and the support/supply vessels will leave the project area. Similarly to the mobilization phase, the transit of the vessels has the potential to induce temporary localized spatial disturbance or alterations to avifauna, which may include, depending on the bird species and individuals, attraction/avoidance of the vessels by their physical presence, as well as, attraction/avoidance/disorientation by vessels' artificial lights at night (ALAN). If the demobilisation and abandonment phase coincides with the spring or autumn migration periods, the negative impacts may

include collisions of migratory birds with the vessels, increased migration energy cost due to attraction/avoidance/disorientation, while positive impacts include provision of additional offshore resting or roosting sites for migratory birds. If the demobilisation and abandonment phase coincides with the breeding seasons of the pelagic seabird species (from spring until autumn) the impacts may include attraction/avoidance/disorientation of seabirds at night increasing energy cost and in extreme cases collisions with the vessels, with increased risks during the fledging period of the burrow-nesting seabirds (Scopoli's and Yelkouan Shearwaters, European Storm-petrel).

In summary, with regard to their significance, the expected impacts on avifauna associated with the demobilisation and abandonment phase are assessed as **negative** (-) for the majority of impacts apart from the provision of resting/roosting sites which is assessed as **positive** (+). The above impacts have been considered transboundary because they have an effect on migratory species, as well as, seabird species that are regularly present in the wider area of the Ionian Sea and the Adriatic Sea. The impacts of collision with vessels and increased energy cost/exhaustion/starvation are qualified as **minor**, while the provision of additional resting/roosting sites for migratory birds onboard project vessels is qualified as **positive**. Please refer to the below table for a breakdown of impact quantification per activity for the demobilisation and abandonment phase.

| Impacts on avifauna                                                                              |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |     |                            |                     |
|--------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|-----|----------------------------|---------------------|
| Project Activities / Elements                                                                    | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |     | Valued Receptor Assessment | Impact Significance |
| MODU circulation and surface handling operations (collisions)                                    | -          | 2              | 8           | 4           | 2                | 1                  | 2            | 4           | 1                | 3             | 1                 | 40                    | Low | Medium                     | MINOR               |
| MODU circulation and surface handling operations (increased energy cost/ exhaustion/ starvation) | -          | 2              | 8           | 4           | 2                | 1                  | 2            | 4           | 1                | 3             | 1                 | 40                    | Low | Medium                     | MINOR               |
| MODU circulation and surface handling operations (resting/ roosting sites)                       | +          | 2              | 8           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 37                    | Low | Medium                     | POSITIVE            |

#### 10.1.5.4 Areas of the National System of Protected Areas

The Asopus-1 exploration well does not fall within any area of the national system of protected areas.

The closest Natura 2000 sites to the Asopus 1 exploration well site are the Marine area of the Diapontia islands Special Area of Conservation (SAC) (GR2230010) and the Diapontia Islands: Othoni, Ereikousa, Mathraki and rocky islets Special Protection Area (SPA) (GR2230008), both located approximately 44 km northeast from the Project. The Costa Otranto - Santa Maria di Leuca SAC (IT9150002) is located approximately 53 km northwest away in Italy. The Ugento Coast SAC (IT9150009) is located in Italy at a distance of approximately 66 km northwest from the exploration well. The Gallipoli Coast and St. Andrea Island SPA/SAC (IT9150015) is located approximately 80 km northwest from the well.

#### 10.1.5.4.1 Drilling preparation and mobilisation phase

During the drilling preparation and mobilisation phase, transit and positioning of MODU and support vessels can have impacts on the protected areas from the non-impulsive underwater noise produced by the engines and propellers and from the possibility of collision with marine animals. The Port of Igoumenitsa will serve as the operational base for Platform Supply Vessel (PSV) movements supporting the offshore drilling operations. Baseline conditions indicate that the project area is already subject to frequent shipping activities. The impacts arising from the additional vessel transits generated by the proposed exploration well are expected to have moderate effects on protected areas.

| Impacts on areas of the national system of protected areas                                 |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|--------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                                                              | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| Mobilisation of MODU to well site – power generation (direct underwater noise disturbance) | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               |

#### 10.1.5.4.2 Exploration drilling operations phase

During the drilling operations phase, impacts to areas of the national system of protected areas are expected to arise from discharge of water based fluids and cuttings near sea surface (drilling with riser), cement discharges near sea surface from tank wash out, discharges of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels, discharges of ballast from MODU and support/supply vessels, vertical seismic profile (VSP) activities and support activities (movement of support vessels). As the project area does not fall within any protected areas and the closest one is approximately 44 km northeast from the Project, the impacts are expected to be minor to moderate.

Following the implementation of prevention and mitigation measures described in Chapter 11 of this ESIA, residual impacts are assessed as **minor**.

| Impacts on areas of the national system of protected areas                          |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |                                  |
|-------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|----------------------------------|
| Project Activities / Elements                                                       | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
| Mobilisation of MODU to well site – power generation                                | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
| MODU safety exclusion zone and support/supply vessel transfers                      | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
| Discharge of water based fluids and cuttings near sea surface (drilling with riser) | -          | 1              | 2           | 2           | 2                | 1                  | 2            | 4           | 1                | 2             | 4                 | 25                    | Low        | High                       | MODERATE            | MINOR                            |

| Impacts on areas of the national system of protected areas                                                               |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |                                  |
|--------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|----------------------------------|
| Project Activities / Elements                                                                                            | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
| Cement discharges near sea surface from tank wash out                                                                    | -          | 1              | 2           | 2           | 2                | 1                  | 2            | 4           | 1                | 2             | 4                 | 25                    | Low        | High                       | MODERATE            | MINOR                            |
| Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels | -          | 1              | 1           | 3           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
| Discharge of ballast from MODU and support/supply vessels                                                                | -          | 1              | 2           | 2           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | High                       | MINOR               | MINOR                            |
| Vertical seismic profile (VSP) activities                                                                                | -          | 2              | 4           | 4           | 2                | 2                  | 2            | 4           | 1                | 2             | 1                 | 32                    | Low        | High                       | MODERATE            | MINOR                            |
| Support activities (movement of support vessels)                                                                         | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
| Mobilisation of MODU to well site – power generation                                                                     | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |

#### 10.1.5.4.3 Demobilisation and abandonment phase

During the demobilisation and abandonment phase, no significant impacts on areas of the national system of protected areas are expected. Offshore activities will be limited to the removal of the temporary subsea structure and transit of the MODU and support vessels.

#### 10.1.5.5 Forests and wooded areas

No significant adverse impacts on forests and wooded areas are expected. The proposed project is located offshore and the shorebase facilities of the Project do not fall within the boundaries of the ratified and published forest map of Igoumenitsa.

#### 10.1.5.6 Other Significant Natural Areas

The Project under assessment is located within the South Adriatic Ionian Strait Ecologically or Biologically Significant Marine Area (EBSA).

The closest designated Important Marine Mammal Area (IMMA) to the project area is the Ionian Archipelago IMMA, located approximately 37 km east of the Asopus-1 exploration well. In the broader regional context, other formally designated IMMAs include the Hellenic Trench, the Gulf of Ambracia, and the Gulf of Corinth.



The closest Cetacean Critical Habitat (CCH) to the project area is the Sazani Island-Karaburun Peninsula, located approximately 72 km north from the exploration well. The closest Important Shark and Ray Area to the project area is the Santa Maria di Leuca ISRA, located approximately 20 km west/southwest from the exploration well. The Western Apulian Coast ISRA is located approximately 56 km northwest from the exploration well. The closest Key Biodiversity Area to the project area is the Diapontia islands (Othonoi, Ereikousa, Mathraki) and surrounding islets KBA (2943), located approximately 40 km northeast from the exploration well (see section 8.5.4).

#### 10.1.5.6.1 Drilling preparation and mobilisation phase

The project area falls within the South Adriatic Ionian Strait (EBSA). The designation recognizes the ecological importance of the area as habitat for Cuvier's beaked whale (*Ziphius cavirostris*), giant devil ray (*Mobula mobular*), striped dolphin (*Stenella coeruleoalba*), Mediterranean monk seal (*Monachus monachus*), and loggerhead sea turtle (*Caretta caretta*). As abovementioned, in the close vicinity of the project there are other areas that protect marine mammals, sharks, sea turtles and marine fauna. The impacts on other significant natural areas during drilling preparation and mobilisation phase are expected to be consistent to those on marine mammals (10.1.5.2.4.1), sea turtles (10.1.5.2.5.1), and fish fauna (10.1.5.2.3.1).

#### 10.1.5.6.2 Exploration drilling operations phase

During the drilling operations phase, impacts to other significant natural areas are expected to be similar to the impacts on marine mammals (10.1.5.2.4.2), sea turtles (10.1.5.2.5.2), and fish fauna (10.1.5.2.3.2).

#### 10.1.5.6.3 Demobilisation and abandonment phase

As the project area falls within the South Adriatic Ionian Strait (EBSA), the impacts during the demobilisation and abandonment phase are consistent with those on marine mammals (10.1.5.2.4.3), sea turtles (10.1.5.2.5.3), and fish fauna (10.1.5.2.3.3).

### 10.1.6 Impacts on Air Quality

#### 10.1.6.1 Drilling Preparation and Mobilization Phase

During the drilling preparation and mobilisation phase, impacts on air quality will arise from the mobilisation of MODU to the well site, vessel transits, power generation on the MODU, helicopter operations, and the establishment of temporary onshore logistics facilities at the Port of Igoumenitsa. Emissions will primarily consist of combustion-related pollutants, including nitrogen oxides (NO<sub>x</sub>), sulphur oxides (SO<sub>x</sub>), carbon monoxide (CO), particulate matter (PM), and greenhouse gases (GHGs), associated with marine engines and mobile equipment used for cargo handling and material mobilisation.

At the onshore logistics base, emissions will be generated by diesel-powered equipment such as cranes, forklifts and trucks operating within the existing port environment. No major construction works, dredging, excavation or land reclamation are required, and consequently dust generation is expected to be negligible.

The consequences on air quality will be short-term and spatially limited due to the short period of these activities, the utilization of existing infrastructure, and the lack of construction, dredging, or earthworks. Dust generation is expected to be negligible.

In summary, with regard to their significance, the impacts on air quality during the mobilisation phase are assessed as negative (-), with intensity ranging from negligible to low (IN = 1–2), spatial extent from localised to limited (EX = 1–2), occurring immediately during mobilisation activities (MO = 4), coincident with the mobilisation period (PE = 1), short-term and fully reversible (RV = 1), with low to moderate synergistic interaction effects (SI = 1–2), direct (EF = 4), discontinuous in nature (PR = 1–2), characterised by short-term recovery potential (MC = 2), and non-cumulative (AC = 1). In terms of their overall significance, these impacts are assessed as **minor**.

| Impacts on air quality                               |            |                |             |             |                  |                    |             |             |                  |               |                   |                       |            |                            |                     |
|------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|-------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                        | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synerg (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| Mobilisation of MODU to well site – power generation | -          | 1              | 2           | 4           | 1                | 1                  | 2           | 4           | 1                | 2             | 1                 | 23                    | Low        | Medium                     | MINOR               |
| Onshore base equipment and utilities installation    | -          | 1              | 1           | 4           | 1                | 1                  | 1           | 4           | 1                | 2             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          |
| Onshore loading/unloading or staging                 | -          | 2              | 1           | 4           | 1                | 1                  | 2           | 4           | 2                | 2             | 1                 | 25                    | Low        | Medium                     | MINOR               |

#### 10.1.6.2 Exploration Drilling Operations Phase

During the exploration drilling operations phase, atmospheric emissions will be dominated by offshore combustion sources, primarily the MODU, support vessels, and helicopter transfers. The main pollutants will include NO<sub>x</sub>, SO<sub>x</sub>, CO, PM and greenhouse gases, arising from fuel combustion in marine engines and auxiliary power systems.

Based on the emissions inventory for the 67-day drilling campaign, total offshore emissions are conservatively estimated at approximately 331.4 tonnes of NO<sub>x</sub>, 17.6 tonnes of CO, 8.4 tonnes of SO<sub>2</sub> and 4.9 tonnes of PM<sub>10</sub>. The offshore atmospheric emissions inventory indicates that the MODU will constitute the dominant source of air emissions during the Project, accounting for approximately 63% of total NO<sub>x</sub> emissions and a similar proportion of SO<sub>2</sub>, CO and particulate matter emissions. This reflects the continuous power demand associated with drilling operations, dynamic positioning and onboard auxiliary systems throughout the 67-day drilling campaign.

Support vessels represent the second most important emission source, contributing approximately 36% of total offshore emissions. These emissions are associated with routine supply, standby and logistics operations required to support the drilling programme. Although support vessel activity will be intermittent, their cumulative fuel consumption over the drilling campaign results in a significant contribution to the overall emissions inventory.

Helicopter operations will contribute only a minor proportion of total atmospheric emissions (less than 1% for all pollutants), owing to the relatively low fuel consumption and limited frequency of personnel transfer flights.

Overall, the offshore emissions profile is therefore strongly dominated by the operation of the MODU, followed by support vessels, while helicopter activities make a negligible contribution. The absence of planned well testing, venting or flaring further limits the overall atmospheric emissions associated with the Project, such that emissions are almost exclusively related to fuel combustion for power generation, marine transport and logistics support.

No well testing, venting or flaring is planned as part of the drilling programme; therefore, emissions associated with hydrocarbon release or combustion under such conditions are excluded. The contribution to coastal and regional air quality is expected to be negligible due to the drilling site's offshore location (>44 km from shore), favorable dispersion conditions, and absence of sensitive receptors in proximity to the drilling location.

No other offshore drilling activities are planned near the MODU. A screening-level assessment indicates that the Project's contribution of NO<sub>x</sub>, SO<sub>x</sub> and particulate matter to regional background concentrations, including emissions from shipping and other sources in the Ionian Sea, is expected to be negligible. Considering the offshore location, temporary 67-day duration, low sulphur fuel requirement applicable under the Mediterranean SO<sub>x</sub> ECA, and effective atmospheric dispersion, the Project is not expected to cause a significant adverse effect on regional or coastal air quality.

The atmospheric emissions associated with onshore activities at the Port of Igoumenitsa are expected to be minor in comparison with offshore emissions and will represent only a very small contribution to the overall Project emissions inventory. Onshore emissions will arise primarily from the intermittent operation of diesel-powered cargo-handling and logistics equipment, including forklifts, cranes, trucks and other mobile machinery used for loading, unloading, storage and transfer of materials, equipment and wastes within the temporary Supply Base.

Based on the estimated fuel consumption, total emissions from shore base activities over the entire 67-day drilling campaign are estimated at approximately 642 kg of NO<sub>x</sub>, 212 kg of CO, 66 kg of NMVOCs and 41 kg of PM<sub>10</sub>. These quantities are several orders of magnitude lower than the corresponding offshore emissions, reflecting the limited scale and intermittent nature of port-based support activities.

The temporary Supply Base will be established within an existing operational port area where similar cargo-handling and vehicle movements routinely occur. Overall, onshore atmospheric emissions are expected to be localised, temporary and readily manageable through standard good industry practice, including routine equipment maintenance, efficient logistics planning and minimisation of unnecessary vehicle movements and engine idling. Furthermore, the use of ultra-low sulphur diesel in accordance with EU fuel quality standards will minimise SO<sub>2</sub> emissions. As a result, Project-related onshore activities are not expected to result in significant adverse effects on local ambient air quality.

Management measures will focus on fuel consumption, engine efficiency, logistics optimisation, compliance with MARPOL Annex VI fuel sulphur requirements, and the identification and reporting of any methane releases that may arise from in-scope exploration activities.

In summary, with regard to their significance, the impacts on air quality during the drilling operations phase are assessed as negative (-), of negligible to low intensity (IN=1-2), localised to the onshore port area and extending to the offshore operational area (EX=1-2), immediate (MO=4), temporary throughout the drilling period (PE=1), short-term and fully reversible following cessation of activities (RV=1), with limited synergistic effects with existing marine and port emissions (SI=2), direct (EF=4), either continuous or occasional depending on the activity (PR=1-4), with short-term recovery after completion of drilling (MC=1-2), and non-cumulative (AC=1). Overall, these impacts are assessed as **minor**.

| Impacts on air quality                                  |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|---------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                           | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| MODU and support/supply vessel power generation         | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 4                | 2             | 1                 | 29                    | Low        | Medium                     | MINOR               |
| Operation of onshore facilities, equipment and vehicles | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          |
| Helicopter transfers between heliport and MODU          | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 22                    | Low        | Medium                     | MINOR               |

#### 10.1.6.3 Demobilisation and abandonment phase

During the demobilisation and abandonment phase, atmospheric emissions will arise primarily from the departure and transit of the MODU and support vessels from the drilling location, helicopter transfers (if required), and the dismantling and removal of temporary facilities, equipment and materials from the onshore logistics base at the Port of Igoumenitsa.

Offshore emissions will mainly originate from fuel combustion associated with vessel transit and well abandonment activities, including MODU operation and surface handling operations. The principal pollutants emitted will include nitrogen oxides (NO<sub>x</sub>), sulphur oxides (SO<sub>x</sub>), carbon monoxide (CO), particulate matter (PM) and greenhouse gases (GHGs). However, as these activities are of relatively short duration compared to the overall drilling campaign, atmospheric emissions are expected to be lower than those generated during active drilling operations.

Onshore emissions will result from the use of trucks, cranes, forklifts and other mobile equipment required for the removal and transport of temporary installations, drilling materials and waste from the Supply Base. As all activities will take place within an existing operational port area and no demolition, excavation or earthworks are planned, dust generation is expected to be negligible.

Overall, atmospheric emissions during demobilisation and abandonment will be temporary, localised and operational in nature, due to the short duration of the activities, the use of existing infrastructure, compliance with applicable international and European emission standards, and the absence of major construction works.

In summary, with regard to their significance, the impacts expected on air quality during the demobilisation and abandonment phase are assessed as negative (-), of negligible intensity (IN=1), localised (EX=2), immediate (MO=4), coincident with demobilisation activities (PE=1), short-term reversible (RV=1), synergistic (SI=2), direct (EF=4), discontinuous (PR=1), of short-term recovery (MC=2), and non-cumulative (AC=1). In terms of their overall significance, these impacts are assessed as **minor**.

| Impacts on air quality                           |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |     |                            |                     |
|--------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|-----|----------------------------|---------------------|
| Project Activities / Elements                    | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |     | Valued Receptor Assessment | Impact Significance |
| MODU circulation and surface handling operations | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 1                 | 23                    | Low | Medium                     | MINOR               |

## 10.1.7 Impacts on the acoustic environment and emissions of vibrations and radiation

### 10.1.7.1 Airborne noise

#### 10.1.7.1.1 Drilling preparation and mobilisation phase

**Offshore**, the principal noise sources will comprise the transit of the MODU to the drilling location, support and supply vessel movements, operation of vessel propulsion systems, auxiliary engines, generators and deck machinery during positioning, loading operations and commissioning activities. These noise emissions will be temporary, and their effect will be predominantly in the offshore operational area. Considering the well site's remote location, approximately 44 km from the nearest shoreline, airborne noise generated offshore will not be perceptible at onshore noise-sensitive receptors.

Offshore noise will primarily affect personnel onboard the MODU and vessels, with occupational exposure managed through the relevant MODU and vessel operators' management systems, supported by Energean's contractor assurance arrangements, and applicable maritime regulations.

**Onshore**, noise will be associated with unloading and storage of equipment at the Port of Igoumenitsa shore base, forklift and crane operations, heavy goods vehicle movements, installation of temporary offices and utilities, and routine logistics activities.

These activities will occur within an existing commercial port environment where elevated background noise levels are already present due to port operations and traffic. The number of personnel involved will be limited and the activities will be temporary. Consequently, only negligible short-term increases in ambient noise levels are expected at nearby receptors, with no significant disturbance anticipated.

In summary, with regard to their significance, airborne noise impacts during the mobilisation phase are assessed as negative (-), with intensity ranging from negligible to low (IN = 1-2), spatial extent from localised to limited (EX = 1-2), occurring immediately during mobilisation activities (MO = 4), coincident with the

mobilisation period (PE = 1), short-term and fully reversible (RV = 1), with low to moderate synergistic interaction effects (SI = 1–2), direct (EF = 4), discontinuous in nature (PR = 1–2), characterised by short-term recovery potential (MC = 2), and non-cumulative (AC = 1). In terms of their overall significance, these impacts are assessed as **minor**.

| Airborne noise impacts                               |            |                |             |             |                  |                    |             |             |                  |               |                   |                       |            |                            |                     |
|------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|-------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                        | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synerg (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| Mobilisation of MODU to well site – power generation | -          | 1              | 2           | 4           | 1                | 1                  | 2           | 4           | 1                | 2             | 1                 | 23                    | Low        | Medium                     | MINOR               |
| Onshore base equipment and utilities installation    | -          | 1              | 1           | 4           | 1                | 1                  | 1           | 4           | 1                | 2             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          |
| Onshore loading/unloading or staging                 | -          | 2              | 1           | 4           | 1                | 1                  | 2           | 4           | 2                | 2             | 1                 | 25                    | Low        | Medium                     | MINOR               |

#### 10.1.7.1.2 Exploration drilling operations phase

During drilling operations, the MODU will represent the main source of airborne noise throughout the 67-day drilling campaign. Continuous operation of main engines, diesel generators, DP system and thrusters, drilling machinery, mud pumps, ventilation systems, compressors and other auxiliary equipment will generate continuous airborne noise within the immediate vicinity of the drilling unit. Additional intermittent noise will arise from deck equipment operation (e.g. cranes), pipe handling, supply vessel loading and unloading, bulk material transfers, waste handling activities and routine maintenance operations.

Support and supply vessels undertaking crew transfers and logistical support will also contribute periodic airborne noise through engine operation and manoeuvring.

Helicopter transfers between Corfu International Airport and the MODU will generate short-duration airborne noise during take-off, landing and overflight. Flights are expected to occur only several times per week and will generally follow routes determined by the aviation operator in accordance with applicable aviation requirements, operational safety and relevant noise-abatement procedures. Considering the MODU's offshore position and the limited frequency and duration of helicopter operations, helicopter noise is not expected to result in significant disturbance to onshore receptors.

Because the MODU is located approximately 44 km offshore, atmospheric attenuation over this distance will substantially reduce airborne noise propagation, and noise generated by offshore operations is not expected to be perceptible at the nearest island or mainland communities. Consequently, no significant impacts on terrestrial noise-sensitive receptors are anticipated.

Onshore, airborne noise will arise from continued logistics activities at the Port of Igoumenitsa shore base, including loading and unloading of supplies, waste handling, forklift and crane operations, vehicle movements and routine administration. These activities will occur within an established industrial port environment, where similar noise sources already exist. The small onshore workforce and relatively low intensity of shore base operations mean that any increase in ambient noise levels will be minor and temporary, without materially affecting nearby receptors.

In summary, with regard to their significance, airborne noise impacts during the drilling operations phase are assessed as negative (-), of negligible to low intensity (IN=1-2), localised to the onshore port area and extending to the offshore operational area (EX=1-2), immediate (MO=4), temporary throughout the drilling period (PE=1), short-term and fully reversible following cessation of activities (RV=1), with limited synergistic effects with existing noise emissions (SI= 1 - 2), direct (EF=4), either continuous or occasional depending on the activity (PR=1-4), with short-term recovery after completion of drilling (MC=1), and non-cumulative (AC=1). Overall, these impacts are assessed as **minor**.

| Airborne noise impacts                                  |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|---------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                           | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| Drillship dynamic positioning (DP)                      | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 22                    | Low        | Medium                     | MINOR               |
| MODU drilling, wellhead and casing installation         | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 4                | 1             | 1                 | 25                    | Low        | Medium                     | MINOR               |
| MODU and support/supply vessel power generation         | -          | 2              | 2           | 4           | 1                | 1                  | 1            | 4           | 4                | 1             | 1                 | 27                    | Low        | Medium                     | MINOR               |
| Operation of onshore facilities, equipment and vehicles | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          |
| Helicopter transfers between heliport and MODU          | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 25                    | Low        | Medium                     | MINOR               |

### 10.1.7.1.3 Demobilisation and abandonment phase

During demobilisation and abandonment, airborne noise levels will progressively decrease as drilling activities cease and equipment is removed from the well site. Offshore noise sources will include cement plug installation, well abandonment operations, retrieval of subsea equipment, MODU circulation and final well handling activities, crane operations, loading of equipment onto support vessels, vessel manoeuvring and the departure of the MODU from the operational area. These activities will be temporary and of shorter duration than the drilling phase.

The offshore location of the Project ensures that airborne noise generated during abandonment and demobilisation will not be perceptible at onshore noise-sensitive receptors. Occupational exposure onboard the MODU and support vessels will continue to be managed through the relevant MODU and vessel operators' health and safety procedures and applicable regulatory requirements.

Onshore, noise will be generated by the transfer of equipment and materials to the shore base at the Port of Igoumenitsa, unloading activities, dismantling of temporary facilities, waste transfer operations and increased heavy vehicle movements associated with demobilisation. These activities will occur over a relatively short period within the existing operational area of the port and will utilise existing transport routes. Following completion of demobilisation, all temporary activities will cease, and ambient noise levels will return to baseline conditions.



In summary, with regard to their significance, airborne noise impacts during the demobilisation and abandonment phase are assessed as negative (-), of negligible intensity (IN=1), localised (EX=1 – 2), immediate (MO=4), coincident with demobilisation activities (PE=1), short-term reversible (RV=1), with limited synergistic effects with existing port noise emissions (SI= 1 – 2), direct (EF=4), discontinuous (PR=1), of short-term recovery (MC=1), and non-cumulative (AC=1). In terms of their overall significance, these impacts are assessed as **minor**.

| Airborne noise impacts                           |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|--------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                    | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| MODU circulation and surface handling operations | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 21                    | Low        | Medium                     | MINOR               |
| Dismantling and removal from the port area       | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          |

#### 10.1.7.2 Underwater noise

The underwater acoustic environment of the Project area is shaped by both natural and anthropogenic sound sources. Natural sources include wind, waves, rainfall, seismic activity and biological sounds produced by marine mammals, fish and other marine organisms. Anthropogenic sources include commercial shipping, fishing vessels, sonar systems, military activities and offshore exploration activities. Underwater sound levels are expressed in dB re 1 µPa and are not directly comparable with airborne sound levels, which use a different reference pressure. For continuous underwater noise, root mean Square Sound Pressure (SPLrms) is commonly used, while peak sound pressure (SPLpeak) is more relevant for impulsive or transient sound sources.

Baseline acoustic monitoring undertaken in the Ionian Sea indicates that the existing soundscape is already influenced by vessel traffic and intermittent anthropogenic noise events. During the April 2026 offshore monitoring campaign, daily percentile levels were calculated for the 63 Hz and 125 Hz third-octave bands. The average L90 SPLrms value was approximately 89.8 dB re 1 µPa at 63 Hz and 85.6 dB re 1 µPa at 125 Hz, while the corresponding average L90 SPLpeak values were approximately 100.5 dB re 1 µPa and 96.8 dB re 1 µPa respectively. These values indicate a moderately disturbed offshore soundscape influenced mainly by distant vessel noise, particularly low-frequency propeller cavitation and shipping activity.

The monitoring results also showed intermittent anthropogenic noise events, including probable airgun signals, explosive-type sounds and high-frequency active sonar. These findings indicate that the Project area is already subject to variable natural and human-generated underwater noise. Previous monitoring in the wider Ionian Sea also recorded elevated peak sound pressure levels in coastal and semi-enclosed areas, with the North Ionian showing average SPLpeak values of approximately 127.1 dB re 1 µPa. However, the Project-specific offshore measurements were lower than those recorded in more traffic-influenced coastal waters.

An underwater noise impact study was conducted for the Asopus-1 exploration drilling campaign. The study characterises impulsive sound from the impulsive VSP airgun array and non-impulsive sound from the drillship, including dynamic positioning operations, and from associated Project vessels. It models underwater sound propagation under representative seasonal conditions and estimates the distances at which the adopted acoustic effect criteria may be reached for marine mammals, fish and sea turtles.

This study comprises the following:

- an overview of the underwater acoustic terminology and metrics used in the assessment;
- characterisation of impulsive sound from the VSP airgun array and non-impulsive sound from the drillship and associated Project vessels;
- identification of relevant marine-fauna receptors and acoustic effect criteria;
- a description of the underwater sound propagation modelling methodology and input data;
- presentation and interpretation of the propagation and acoustic-effect modelling results; and
- a review of the principal assumptions and limitations of the assessment.

The principal sources of underwater noise are vessel movements during mobilisation and demobilisation, operational sound from the dynamically positioned drillship during drilling, and impulsive sound from the VSP airgun array, if VSP acquisition is undertaken during the drilling phase. The modelled distances represent conservative screening thresholds and should not be interpreted as continuous ecological impact areas.

The underwater sound modelling estimated the maximum distances at which adopted acoustic screening levels may be reached. These distances are conservative modelled threshold ranges and should not be interpreted as continuous impact areas.

#### 10.1.7.2.1 Drilling preparation and mobilisation phase

During the drilling preparation and mobilisation phase, underwater noise will be generated mainly by the transit and positioning of the MODU and support vessels. The principal noise sources will be vessel propulsion, propeller cavitation, auxiliary machinery and, during final positioning, dynamic positioning systems. These sources are similar in character to existing vessel noise already present in the Ionian Sea acoustic environment.

No drilling, VSP operations or wellhead activities will occur during mobilisation. Therefore, underwater noise during this phase will be limited to short-term vessel movements and marine logistics. Helicopter transfers, where undertaken, are expected to make a negligible contribution to underwater noise because air-to-water acoustic coupling is weak and any underwater sound is short-lived and confined to the area directly below the aircraft.

Representative literature values indicate that support vessels may generate underwater source levels of approximately 180–190 dB re 1  $\mu$ Pa @ 1 m, mainly in the low-frequency range, while small to medium offshore vessels may fall within the broader range of 170–195 dB re 1  $\mu$ Pa @ 1 m depending on vessel type, propulsion system, speed and loading condition.

In the context of the measured baseline soundscape, mobilisation underwater noise will represent a temporary increase above existing vessel-related background noise. At 14 knots, the maximum modelled

distance to the lower adopted screening level is approximately 54 km for the conservatively modelled support-vessel source. For the drillship in transit, the corresponding distances are approximately 33.7 km. At 4 knots, the modelled distance is substantially lower, approximately 9.9 km, depending on vessel type.

These results indicate that underwater sound from mobilisation may propagate over comparatively large distances under conservative conditions, particularly during open-water transit. However, vessel transit is temporary, mobile and limited in duration.

In summary, with regard to their significance, underwater noise impacts during the mobilisation phase are assessed as negative (-), of low intensity (IN = 2), limited spatial extent (EX = 2), occurring immediately during mobilisation activities (MO = 4), coincident with the mobilisation period (PE = 1), short-term and fully reversible (RV = 1), with moderate synergistic interaction effects (SI = 2), direct (EF = 4), discontinuous in nature (PR = 1), characterised by short-term recovery potential (MC = 2), and non-cumulative (AC = 1). In terms of their overall significance, these impacts are assessed as **moderate**. Following the implementation of prevention and mitigation measures described in Chapter 11 of this ESIA, residual impacts are assessed as **minor**

| Underwater noise impacts                              |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |     |                            |                     |                                  |
|-------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|-----|----------------------------|---------------------|----------------------------------|
| Project Activities / Elements                         | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |     | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
| Mobilisation of MODU and support vessels to well site | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 25                    | Low | High                       | MODERATE            | MINOR                            |

#### 10.1.7.2.2 Exploration Drilling Operations Phase

During the exploration drilling phase, the dominant continuous underwater noise source will be the MODU operating at the well location. Main contributors will include dynamic positioning thrusters, propulsion systems, onboard machinery, power generation systems, drilling-related equipment and structure-borne vibration. Drilling and onboard equipment noise is expected to be dominated by low-frequency components.

Support vessels will generate additional intermittent underwater noise during supply, standby and logistics operations. Vessel noise will mainly arise from propulsion, propeller cavitation, vessel manoeuvring and auxiliary machinery.

Representative literature values indicate a drillship source level of approximately 195 dB re 1  $\mu$ Pa @ 1 m, with a typical frequency range of 40–600 Hz, while support vessels are expected to generate approximately 180–190 dB re 1  $\mu$ Pa @ 1 m within the 50–300 Hz range.

Compared with the baseline acoustic conditions recorded in April 2026, the drillship and support vessels will introduce a continuous localised source of low-frequency underwater noise at the well location. This may temporarily increase the local sound field above background levels, particularly in the vicinity of the MODU. However, the measured baseline already shows influence from distant shipping and intermittent anthropogenic events, and the Project source is temporary and spatially restricted. Conceptual modelling for comparable deepwater offshore drilling activities indicates that underwater noise from drilling and vessel operations attenuates rapidly with distance from the source.

During VSP operations, impulsive sound energy is transmitted from a near surface source to receivers located within the wellbore. The emitted sound energy is predominantly directed towards the seabed and subsurface geological formations, with the highest sound levels occurring immediately beneath the source. Each air gun discharge also ensonifies the surrounding water column, generating a short-duration, low-frequency impulse whose received level decreases with increasing distance from the source. VSP will involve short-duration airgun pulses from a small source deployed from the drillship, and will be substantially lower in total acoustic output, duration and spatial extent than conventional 2D or 3D seismic surveys. The activity is expected to involve a limited number of shots over short operational periods at a single well location.

If VSP acquisition is undertaken, the VSP airgun array will represent the highest-energy underwater sound source during the drilling phase. For a single VSP discharge, higher-level acoustic screening distances are generally limited to the immediate vicinity of the source, mostly at or below approximately 151 m, with a maximum reported distance of approximately 302 m. Lower-level screening distances are larger, reaching up to approximately 12.6 km for one screening criterion, and up to approximately 40.1 km for another lower screening criterion.

While each VSP wireline logging operation is allocated a 12-hour survey window on the rig schedule for tool deployment, depth positioning, testing, and retrieval, the actual active airgun discharge is expected to comprise approximately ~130 shots per section (~260 shots total across the entire campaign) at 15-second firing intervals. This results in an active firing duration of only ~97.5 minutes per section (~3.3 hour total cumulative firing across the campaign).

Routine drilling noise is continuous rather than impulsive, and the highest exposure levels will be limited to the area close to the MODU and support vessels. For drillship operational sound, near-source screening distances are short, generally around 31 m and limited by model resolution. The lower adopted screening level is reached at approximately 29 km. For cumulative exposure, the conservative 24-hour fixed-receptor scenario gives a maximum modelled distance of approximately 21.5 km for the most sensitive cumulative screening case. This result assumes a stationary receptor and continuous operation at the modelled source level; actual sound exposure will vary with drillship operating mode, dynamic-positioning thruster demand and local conditions.

With regard to the impacts from drilling contingency activities, extended drilling, re-spudding, sidetracking, vessel activity, ROV operations, well suspension, reconnection and pipe recovery could increase the duration of underwater noise emissions. The use of an explosive pipe-severance device, if required in a stuck pipe contingent case, could generate a very short-duration localised underwater noise and vibration event deep into the wellbore and within the drill string. These impacts would be temporary and localised. They may increase short-term disturbance to marine fauna in the vicinity of the MODU but would not introduce a continuous or long-term underwater noise source beyond the drilling campaign.

In summary, with regard to their significance, underwater noise impacts during the drilling operations phase are assessed as negative (-), of varying intensity depending on the activity (IN = 1 – 4), extending to the offshore operational area (EX = 1 – 2), immediate (MO=4), temporary throughout the drilling period (PE=1), short-term and fully reversible following cessation of activities (RV=1), with limited synergistic effects with existing noise emissions (SI= 1 – 2), direct (EF=4), either continuous or occasional depending on the activity (PR=1–4), with short-term recovery after completion of drilling (MC=1), and non-cumulative (AC=1). Overall, these impacts are assessed as **moderate**.

Following the implementation of prevention and mitigation measures described in Chapter 11 of this ESIA, residual impacts are assessed as **minor**.

| Underwater noise impacts                                         |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |     |                            |                     |                                  |
|------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|-----|----------------------------|---------------------|----------------------------------|
| Project Activities / Elements                                    | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |     | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
| MODU safety exclusion zone and support / supply vessel transfers | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 25                    | Low | High                       | MODERATE            | MINOR                            |
| Drillship dynamic positioning (DP)                               | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 22                    | Low | High                       | MODERATE            | MINOR                            |
| MODU drilling, wellhead and casing installation                  | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 4                | 1             | 1                 | 25                    | Low | High                       | MODERATE            | MINOR                            |
| MODU and support/supply vessel power generation                  | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 4                | 1             | 1                 | 25                    | Low | High                       | MODERATE            | MINOR                            |
| Vertical seismic profile (VSP) activities                        | -          | 4              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 30                    | Low | High                       | MODERATE            | MINOR                            |
| Support activities (movement of support vessels)                 | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 25                    | Low | High                       | MODERATE            | MINOR                            |
| Drilling contingency activities                                  | -          | 4              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 23                    | Low | High                       | MODERATE            | MINOR                            |

### 10.1.7.2.3 Demobilisation and abandonment phase

During the demobilisation and abandonment phase, underwater noise will arise mainly from well plug and abandonment activities, continued MODU operation, support vessel movements, ROV inspection and final vessel departure from the well location. The principal noise sources will remain the non-impulsive vessel propulsion, dynamic positioning thrusters, onboard machinery, generators, pumps and short-term subsea inspection activities.

Plug and abandonment activities will be carried out from the MODU using conventional well control, cementing and circulation systems. These activities are not expected to introduce a materially different underwater noise source from those already generated during routine MODU and vessel operations.

As abandonment progresses, Project-related underwater noise will gradually reduce. Once plug and abandonment activities are completed and the MODU and support vessels depart, Project-related underwater noise will cease and the local acoustic environment is expected to return to baseline conditions.

In the context of the existing variable Ionian Sea soundscape, underwater noise effects during demobilisation and abandonment are expected to remain limited in duration and spatial extent. The activities will be temporary, localised and reversible, with no explosive sources, pile driving, large-scale seismic surveys or wellhead cutting involved.

In summary, with regard to their significance, underwater noise impacts during the demobilisation and abandonment phase are assessed as negative (-), of low intensity (IN= 1 – 2), localised (EX=1 – 2),

immediate (MO=4), coincident with demobilisation activities (PE=1), short-term reversible (RV=1), with limited synergistic effects with other activities (SI= 1 – 2), direct (EF=4), discontinuous (PR=1), of short-term recovery (MC=1), and non-cumulative (AC=1). In terms of their overall significance, these impacts are assessed as **moderate**.

Following the implementation of prevention and mitigation measures described in Chapter 11 of this ESIA, residual impacts are assessed as **minor**.

| Underwater noise impacts                         |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |                                  |
|--------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|----------------------------------|
| Project Activities / Elements                    | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
| Cement plug installation and abandonment         | -          | 2              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 24                    | Low        | High                       | MODERATE            | MINOR                            |
| MODU circulation and surface handling operations | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
| Removal of temporary subsea infrastructure       | -          | 2              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 24                    | Low        | High                       | MODERATE            | MINOR                            |

### 10.1.7.3 Vibrations

#### 10.1.7.3.1 Drilling preparation and mobilisation phase

During the drilling preparation and mobilisation phase, offshore vibration sources will be associated mainly with the mobilisation, movement and positioning of the drillship and support vessels. These may include propulsion systems, engines, generators, auxiliary machinery and vessel manoeuvring systems.

Project vessels may operate at approximately 14 knots during open-water transit and at approximately 4 knots during lower-speed movement near the Project area. The maximum anticipated sailing time for Project vessels is approximately seven hours. As these are moving sources, vibration exposure at any single location will be short-term and will reduce as the vessel moves away.

The drillship will be dynamically positioned and no anchoring will be undertaken. Therefore, no anchor handling, anchor drag or mooring-related seabed vibration is expected. No seabed preparation, dredging or construction works are planned during mobilisation.

At the onshore support base, vibration sources during this phase may include mobilisation logistics, loading and unloading of supplies, movement of trucks and forklifts, crane operations, temporary storage and handling of materials, and vessel berthing or departure. These activities will take place within an existing port environment and will be comparable to routine port operations. No works capable of generating significant ground-borne vibration are planned.

In summary, with regard to their significance, vibration impacts during the mobilisation phase are assessed as negative (-), of negligible to low intensity (IN = 1-2), limited spatial extent (EX = 1-2), occurring immediately



during mobilisation activities (MO = 4), coincident with the mobilisation period (PE = 1), short-term and fully reversible (RV = 1), with none to moderate synergistic interaction effects (SI = 1-2), direct (EF = 4), discontinuous in nature (PR = 1), characterised by immediate recovery potential (MC = 1), and non-cumulative (AC = 1). In terms of their overall significance, these impacts are assessed as **negligible**.

| Vibration Impacts                                    |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                        | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| Mobilisation of MODU to well site – power generation | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 22                    | Low        | Low                        | NEGLIGIBLE          |
| Onshore base equipment and utilities installation    | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 22                    | Low        | Low                        | NEGLIGIBLE          |
| Onshore loading/unloading or staging                 | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | Low                        | NEGLIGIBLE          |

### 10.1.7.3.2 Exploration drilling operations phase

During exploration drilling operations, offshore vibrations may be generated by the drillship's engines, generators, pumps, drilling equipment and dynamic-positioning thrusters. These sources will operate depending on the drilling activity and the level of thruster demand required to maintain the drillship's position.

Vibrations may be transmitted through the drillship structure, marine riser, subsea equipment and wellbore. However, such effects are expected to remain localised around the drillship and well location. Direct drill-bit vibration is expected to be confined to the wellbore and immediately surrounding formation and is not expected to generate seabed-wide or regional vibration effects.

If VSP acquisition is undertaken, it would represent a short-duration impulsive vibration source in the water column. The activity would not be continuous throughout the drilling campaign and is expected to comprise discrete acquisition sequences at approximately 230 stations in total. VSP-related vibration would cease immediately after completion of the acquisition activity and would not involve physical disturbance of the seabed.

At the onshore support base, vibration sources during the exploration drilling operations phase would be limited to intermittent logistics and support activities, including support-vessel turnaround, loading and unloading of consumables, waste transfer, truck movements and handling of materials. These activities would be temporary, intermittent and within the normal operational context of the port.

In summary, with regard to their significance, vibration impacts during the drilling operations phase are assessed as negative (-), of negligible to moderate intensity (IN=1–4), localised or extending to the offshore operational area depending on the activity (EX=1–2), immediate (MO=4), temporary throughout the drilling period (PE=1), short-term and fully reversible following cessation of activities (RV=1), with limited synergistic effects (SI= 1 – 2), direct (EF=4), occasional (PR=1), with short-term recovery after completion of drilling (MC=1), and non-cumulative (AC=1). Overall, these impacts are assessed as **negligible**.



| Vibration impacts                                       |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|---------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                           | Nature (S) | Intensity (IN) | Extent (Ex) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| Drillship dynamic positioning (DP)                      | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 22                    | Low        | Low                        | NEGLIGIBLE          |
| MODU drilling, wellhead and casing installation         | -          | 4              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 28                    | Low        | Low                        | NEGLIGIBLE          |
| MODU and support/supply vessel power generation         | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 22                    | Low        | Low                        | NEGLIGIBLE          |
| Vertical seismic profile (VSP) activities               | -          | 4              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 30                    | Low        | Low                        | NEGLIGIBLE          |
| Drilling contingency activities                         | -          | 4              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 28                    | Low        | Low                        | NEGLIGIBLE          |
| Operation of onshore facilities, equipment and vehicles | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | Low                        | NEGLIGIBLE          |

### 10.1.7.3.3 Demobilisation and abandonment phase

During the demobilisation and abandonment phase, offshore vibration sources will be associated with well abandonment activities, operation of onboard equipment, dynamic positioning, support vessel movements and the departure of the drillship from the Project area.

Plugging and abandonment activities may involve pumps, cementing equipment and other onboard systems, but these are not expected to generate significant vibration beyond the immediate wellbore and drillship area. No piling, blasting, anchoring, seabed excavation or construction works are planned as part of abandonment.

Support vessel and drillship movements during demobilisation will generate temporary vessel-related vibrations similar to those during mobilisation. These will be short-term and associated with moving vessels. Exposure at any one location will therefore be limited in duration.

At the onshore support base, vibration sources during demobilisation may include unloading and backloading of equipment, waste transfer, truck movements, forklift and crane operations, temporary materials handling and vessel berthing or departure. These activities will occur within an existing port setting and are not expected to generate vibration levels materially different from routine port operations.

In summary, with regard to their significance, vibration impacts during the demobilisation and abandonment phase are assessed as negative (-), of low intensity (IN=2), within the Project footprint (EX=1), immediate (MO=4), coincident with demobilisation activities (PE=1), short-term reversible (RV=1), with no synergistic effects (SI= 1), direct (EF=4), discontinuous (PR=1), of short-term recovery (MC=1), and non-cumulative (AC=1). In terms of their overall significance, these impacts are assessed as **negligible**.

| Vibration impacts                                |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |     |                            |                     |  |
|--------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|-----|----------------------------|---------------------|--|
| Project Activities / Elements                    | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |     | Valued Receptor Assessment | Impact Significance |  |
| MODU circulation and surface handling operations | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 22                    | Low | Low                        | NEGLIGIBLE          |  |
| Dismantling and removal from the port area       | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 22                    | Low | Low                        | NEGLIGIBLE          |  |

#### 10.1.7.4 Electromagnetic radiation

##### 10.1.7.4.1 Drilling preparation and mobilisation phase

No radioactive sources or equipment generating significant electromagnetic radiation will be used during mobilisation activities. Electromagnetic emissions will be limited to routine operation of marine navigation, communication and positioning systems onboard the MODU, support vessels and helicopter, together with standard communication equipment at the shore base. These systems operate within internationally regulated frequency bands and represent normal maritime operations. Consequently, no significant impacts associated with electromagnetic radiation or radioactivity emissions are anticipated during mobilisation.

In summary, with regard to their significance, radiation impacts during the mobilisation phase are assessed as negative (-), with negligible intensity (IN = 1), localised (EX = 1), occurring immediately during mobilisation activities (MO = 4), coincident with the mobilisation period (PE = 1), short-term and fully reversible (RV = 1), non-synergistic (SI = 1), direct (EF = 4), discontinuous (PR = 1), restored immediately (MC = 1), and non-cumulative (AC = 1). In terms of their overall significance, these impacts are assessed as **negligible**.

| Radiation impacts                                    |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                        | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| Mobilisation of MODU to well site – power generation | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | Low                        | NEGLIGIBLE          |

##### 10.1.7.4.2 Exploration drilling operations phase

During drilling operations, electromagnetic radiation will be generated by the routine operation of navigation, communication and positioning systems onboard the MODU, support vessels and helicopters. These include marine radar, satellite communications, Global Positioning System (GPS), Automatic Identification System (AIS), Very High Frequency (VHF) and Ultra High Frequency (UHF) radio systems, and dynamic positioning (DP) reference systems. These systems operate continuously throughout the drilling campaign but are designed and operated in accordance with applicable international telecommunications and occupational

exposure standards. Their operation is comparable to that of other commercial offshore vessels and is not expected to measurably alter the existing electromagnetic environment.

Sealed radioactive sources may be used intermittently during logging-while-drilling (LWD) and wireline logging operations for formation evaluation. These sources are fully encapsulated within specialised downhole logging tools and remain contained throughout deployment. They are retrieved following completion of each logging operation and are managed under strict radiation protection procedures in accordance with applicable international standards, European Union legislation and Greek radiation protection regulations. No discharge or release of radioactive material to the marine environment is planned, and no exposure of the public or the environment is expected during normal operations.

No Naturally Occurring Radioactive Material (NORM) associated with produced fluids is anticipated during the exploration drilling programme. Consequently, no radioactive wastes or NORM-contaminated materials requiring management are expected to be generated.

Overall, electromagnetic radiation and the temporary use of sealed radioactive sources are not expected to result in measurable impacts on the environment or nearby receptors.

In summary, with regard to their significance, radiation impacts during the drilling operations phase are assessed as negative (-), of negligible intensity (IN=1), localised (EX=1), immediate (MO=4), temporary throughout the drilling period (PE=1), short-term and fully reversible following cessation of activities (RV=1), with no synergistic effects (SI= 1), direct (EF=4), occasional (PR=1), with short-term recovery after completion of drilling (MC=1), and non-cumulative (AC=1). Overall, these impacts are assessed as **negligible**.

| Radiation impacts                                           |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|-------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                               | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| Radioactive source use and storage (well logging)           | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Low                        | NEGLIGIBLE          |
| Onshore storage and transport of radioactive sealed sources | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Low                        | NEGLIGIBLE          |

#### 10.1.7.4.3 Demobilisation and abandonment phase

During demobilisation and well abandonment, electromagnetic emissions will progressively decrease as drilling activities cease and the MODU, support vessels and associated equipment are removed from the operational area. Remaining emissions will be limited to routine marine communication, navigation and positioning systems used during vessel transit and equipment retrieval.

Any sealed radioactive sources used during drilling operations will have been recovered upon completion of logging activities and removed from the MODU by the specialist service contractor, in accordance with applicable radiation protection requirements. No radioactive materials will remain on the seabed or within the abandoned well, and no radioactive discharges or emissions will occur during demobilisation.

Following completion of the Project, all temporary sources of electromagnetic radiation associated with offshore operations will cease, and no residual impacts related to electromagnetic radiation or radioactivity emissions are anticipated.

In summary, with regard to their significance, radiation impacts during the demobilisation and abandonment phase are assessed as negative (-), of negligible intensity (IN=1), localised (EX=1), immediate (MO=4), coincident with demobilisation activities (PE=1), short-term reversible (RV=1), with no synergistic effects (SI=1), direct (EF=4), discontinuous (PR=1), of short-term recovery (MC=1), and non-cumulative (AC=1). In terms of their overall significance, these impacts are assessed as **negligible**.

| Radiation impacts                                |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|--------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                    | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| MODU circulation and surface handling operations | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | Low                        | NEGLECTIBLE         |

## 10.1.8 Impacts on Water Resources

### 10.1.8.1 Seawater quality

#### 10.1.8.1.1.1 Drilling preparation and mobilisation phase

With regard to the mobilisation phase, the principal pathway for impacts to seawater quality is associated with the transit of the MODU and associated support vessels to the well location. During mobilisation, power generation required for vessel propulsion and onboard operations, together with routine vessel activities (including discharge of sanitary, food and desalination units), has the potential to result in minor and temporary changes to seawater quality.

The mobilisation route will occur within an existing maritime environment that already experiences regular commercial shipping traffic. Consequently, the MODU and associated support vessels will represent only a minor and temporary increase in vessel presence relative to baseline conditions. Any routine discharges associated with power generation, and vessel movements are expected to comply with applicable national and international maritime regulations and industry standards.

No suspended sediment related disturbance is anticipated during mobilisation, as drilling activities and other seabed-interacting operations will not yet have commenced. Therefore, increases in suspended sediment concentrations are not predicted during this phase. Unlike shallow-water drilling projects where anchoring may be required, the proposed MODU will maintain station using dynamic positioning. As a result, no seabed disturbance associated with anchor placement or anchor line drag is anticipated.

Embedded mitigation measures, including vessel maintenance procedures, adherence to pollution prevention requirements, and implementation of spill response arrangements, will minimise the likelihood of releases during loading, unloading and transit activities. In the event of a minor release, the open-water

environment and relatively high dilution capacity of the receiving waters would be expected to limit the duration and magnitude of water quality effects.

In summary, with regard to their significance, the impacts expected on seawater quality during the mobilisation phase are assessed as negative (-), of negligible intensity (IN=1), within the local area (EX=2), occurring immediately during mobilisation activities (MO = 4), coincident with mobilisation activities (PE=1), short-term reversible (RV=1), non-synergistic (SI=1), direct (EF=4), discontinuous (PR=1), immediately restored (MC=1), and non-cumulative (AC=1). In terms of their overall significance, these impacts are assessed as **moderate**. Following the implementation of prevention and mitigation measures described in Chapter 11 of this ESIA, residual impacts are assessed as **minor**.

| Impacts on Seawater Quality                          |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |     |                            |                     |                              |
|------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|-----|----------------------------|---------------------|------------------------------|
| Project Activities / Elements                        | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |     | Valued Receptor Assessment | Impact Significance | Residual Impact Significance |
| Mobilisation of MODU to well site – power generation | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 21                    | Low | High                       | MODERATE            | MINOR                        |

#### 10.1.8.1.1.2 Exploration drilling operations phase

Within the exploration drilling and operations phase, impacts to seawater quality may arise through sediment resuspension from localised seabed disturbance and planned operational discharges to the marine environment. The principal impact pathways are therefore increased suspended sediment concentrations, temporary changes in water quality parameters, and the addition of drilling-related discharges to the receiving environment.

The proposed MODU will maintain station using dynamic positioning. As a result, no seabed disturbance associated with anchor placement or anchor line drag is anticipated. Seabed disturbance will therefore be restricted principally to activities directly associated with drilling infrastructure installation and operation.

Water circulation in the region is strongly influenced by broader Mediterranean oceanographic processes, including the circulation patterns of the Ionian Sea and exchanges between the Adriatic and Eastern Mediterranean basins. These processes promote the dispersion and dilution of suspended material and dissolved constituents introduced into the marine environment. The proposed well location is situated within offshore waters of the Eastern Ionian Sea, an area generally characterised by oligotrophic (low productivity) conditions, high water clarity, and relatively low levels of anthropogenic contamination (Annex 02, ESBS).

Temporary seabed disturbance will occur during drilling, including the well construction and temporary placement of subsea equipment associated with the drilling operation. These activities will result in the localised disturbance of seabed sediments and subsequent increases in suspended sediment concentration within the immediate vicinity of the well location. Sediment particles released into the water column are anticipated to disperse and settle progressively with increasing distance from the source. Consequently, high concentrations of suspended sediment are expected to decrease rapidly away from the drill site. The nature of resuspended material will be influenced by local seabed sediment characteristics. In deeper areas of the Eastern Ionian Sea, sediments are typically dominated by fine-grained silts and clays (see Section 8.3.2),

which may remain suspended within the water column for longer periods than coarser sediments following disturbance. Nevertheless, prevailing hydrodynamic conditions are expected to facilitate dispersal whilst limiting significant accumulation beyond the immediate vicinity of the disturbance source. Following completion of the relevant activities, suspended sediments are expected to settle naturally, resulting in progressive recovery of baseline water quality conditions.

Planned discharges during drilling operations (see Sections 6.8 and 6.9) may include riserless drilling fluids and cuttings, riser drilling discharges, cement returns, ballast water, cooling water, deck drainage, wastewater and blowout preventer fluids. These discharges have the potential to temporarily affect water quality characteristics including turbidity, suspended solids concentrations, dissolved oxygen levels and concentrations of certain chemical constituents within localised areas surrounding the well.

Drill cuttings dispersion modelling predicts that suspended material may be transported away from the discharge location under the influence of prevailing currents, with plume extent varying according to seasonal oceanographic conditions. Drilling discharges may cause temporary changes to seawater quality through the dispersion of drilling fluids, cuttings and associated chemicals. The modelling was based on conservative, worst-case assumptions, including contingency materials (barite/bentonite) that are not expected to be used routinely. Screening-threshold exceedances were predicted mainly near the well location seabed during riserless discharges and in the upper water column during riser discharges.

For the physical presence of suspended drill cuttings in the water column, a PNEC of 100,000 ppb, equivalent to 100 mg/L, has been applied as a screening threshold within the ERMS/DREAM risk-assessment framework (described in Section 6.9.1.1.6). This threshold relates to potential physical effects from suspended particulate matter, such as increased turbidity and particle exposure, rather than chemical toxicity. Exceedance of the threshold would indicate a potential for short-term physical stress to water-column receptors and the need for further assessment; it does not by itself demonstrate confirmed ecological harm. Concentrations of this magnitude, if they occur, would be expected to be confined to the immediate near field of the discharge point, where dilution has not yet substantially reduced suspended solids concentrations. As a conservative broad estimate, any exceedance of the 100,000 ppb suspended-cuttings threshold would be expected to remain within approximately 0.1–0.5 km of the discharge location, and unlikely to extend beyond about 1 km. During riserless sections, this would occur close to the seabed around the well, while during riser sections it would occur close to the sea-surface discharge point before dilution, dispersion and settling through the water column.

Concentrations decrease rapidly with increasing distance from the source point; therefore highest concentrations are confined to the immediate source vicinity of the well while lower levels of concentration are predicted at the outer margins of the plume. Model predictions indicate a greater extent of dispersion during periods of stronger current activity. However, environmental risk associated with suspended material in the water column is predicted to be temporary, with concentrations declining rapidly following cessation of discharges due to natural dilution and dispersion processes. The Mediterranean offshore environment is characterised by substantial water depths and open-water circulation, which promote rapid dilution of discharged materials. Consequently, elevated concentrations of suspended solids and other discharge-related constituents are expected to remain localised and temporary.

Baseline data indicate that offshore sediments within the project area are generally uncontaminated. Whilst isolated exceedances of Pb and Ni were recorded; these showed no relationship with the proposed well



locations and are considered more likely to reflect natural geochemical variability than anthropogenic contamination. Subsequently, sediment resuspension is not expected to result in a significant release of contaminants to the water column or measurable degradation of seawater quality.

Routine operational discharges from the MODU and associated support vessels, including sanitary waste, food waste, desalination unit discharges, drainage water and cooling water have potential to affect concentrations of suspended solids, nutrients and chlorine, as well as to generate biological oxygen demand (BOD). However, these impacts are expected to be localised and temporary, with natural dilution and dispersion processes within the open marine environment limiting the extent and duration of any effects on seawater quality. Furthermore, discharges will be treated in line with best practice and legislative requirements, including those associated with MARPOL Annex V, Mediterranean Sea Special Area provisions and MARPOL Annex IV (sewage).

With regard to the impacts from drilling contingency activities, re-spudding and sidetracking may increase the volume of water-based drilling fluids, cuttings and cement associated with the drilling programme. An Emergency Disconnect Sequence may result in localised discharge of riser contents, including drilling fluids or cuttings, at the seabed. Lost-circulation response may require additional use of loss circulation material and cement, although fluids lost to the formation would not normally be discharged to the marine environment. Potential impacts include localised turbidity, increased suspended solids, short-term changes in water quality near the discharge location, and physical deposition of drilling residues or cement. These effects would be temporary and localised, with dilution and dispersion occurring in the offshore marine environment.

Overall, impacts on seawater quality from drilling discharges are expected to remain localised, temporary and reversible. The highest suspended-solid concentrations would occur only in the immediate near-field of the discharge points, with any potential exceedance of the 100 ppm suspended-cuttings screening threshold unlikely to extend beyond 1 km. Concentrations are expected to decrease rapidly with distance due to dilution, dispersion and particle settling, and elevated levels are not predicted to persist after discharges cease. Considering the offshore location of the well, approximately 44.3 km from the nearest Greek land, these effects would not reach the shoreline or cause measurable degradation of coastal seawater quality under the assessed drilling-discharge scenarios.

In summary, with regard to their significance, impacts expected on seawater quality during the operational exploration phase are assessed as negative (-), ranging from negligible to moderate (IN=1-4), within the project footprint to local (EX=1-2), immediate (MO=4), temporary or permanent throughout the drilling period, depending on the activity (PE=1-4), short-term to medium-term reversible (RV=1-2), synergistic (SI=2), direct (EF=4), irregular or continuous (PR=1-4), with immediate to medium-term restoration (MC=1-3), and cumulative (AC=4). In terms of their overall significance, these impacts are assessed as **moderate**. Following the implementation of prevention and mitigation measures described in Chapter 11 of this ESIA, residual impacts are assessed as **minor**.

| Impacts on Seawater Quality        |   |            |                |             |             |                  |                    |             |             |                  |               |                   |                       |            |                            |                     |                              |
|------------------------------------|---|------------|----------------|-------------|-------------|------------------|--------------------|-------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|------------------------------|
| Project Activities / Elements      |   | Nature (S) | Intensity (IN) | Extent (Ex) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synerg (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance | Residual Impact Significance |
|                                    |   |            |                |             |             |                  |                    |             |             |                  |               |                   |                       |            |                            |                     |                              |
| Drillship dynamic positioning (DP) | - | 1          | 1              | 4           | 1           | 1                | 2                  | 1           | 1           | 1                | 1             | 4                 | 20                    | Negligible | High                       | MINOR               | MINOR                        |



| Impacts on Seawater Quality                                                                                              |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |     |                            |                     |                              |
|--------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|-----|----------------------------|---------------------|------------------------------|
| Project Activities / Elements                                                                                            | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |     | Valued Receptor Assessment | Impact Significance | Residual Impact Significance |
| MODU drilling, wellhead and casing installation                                                                          | -          | 2              | 1           | 4           | 1                | 1                  | 2            | 1           | 4                | 2             | 4                 | 27                    | Low | High                       | MODERATE            | MINOR                        |
| Discharge of water-based fluids and cuttings to seabed (riserless drilling)                                              | -          | 4              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 33                    | Low | High                       | MODERATE            | MINOR                        |
| Discharge of water-based fluids and cuttings near sea surface (drilling with riser)                                      | -          | 4              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 35                    | Low | High                       | MODERATE            | MINOR                        |
| Cement discharges at seabed                                                                                              | -          | 4              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 33                    | Low | High                       | MODERATE            | MINOR                        |
| Cement discharges near sea surface from tank wash out                                                                    | -          | 4              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 35                    | Low | High                       | MODERATE            | MINOR                        |
| Pipe dope use during drilling                                                                                            | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 24                    | Low | High                       | MODERATE            | MINOR                        |
| Testing of MODU blowout preventer (Discharges)                                                                           | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 24                    | Low | High                       | MODERATE            | MINOR                        |
| Discharge of sanitary waste from MODU and support/supply vessels                                                         | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 29                    | Low | High                       | MODERATE            | MINOR                        |
| Discharge of food waste from MODU and support/supply vessels                                                             | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 29                    | Low | High                       | MODERATE            | MINOR                        |
| Desalination unit discharges from MODU                                                                                   | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 26                    | Low | High                       | MODERATE            | MINOR                        |
| Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 29                    | Low | High                       | MODERATE            | MINOR                        |
| Uplift and discharge of cooling water from MODU                                                                          | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 26                    | Low | High                       | MODERATE            | MINOR                        |
| Discharge of ballast from MODU and support/supply vessels                                                                | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 26                    | Low | High                       | MODERATE            | MINOR                        |
| Support activities (movement of support vessels)                                                                         | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 2                | 1             | 4                 | 26                    | Low | High                       | MODERATE            | MINOR                        |
| Drilling contingency activities                                                                                          | -          | 4              | 2           | 4           | 2                | 2                  | 2            | 4           | 1                | 3             | 4                 | 38                    | Low | High                       | MODERATE            | MINOR                        |

#### 10.1.8.1.1.3 Demobilisation and abandonment phase

For the demobilisation and well abandonment phase, the principal pathways for impacts to seawater quality are associated with MODU circulation and surface handling operations, and the removal of temporary subsea infrastructure. These activities have the potential to result in localised and temporary changes to seawater quality through the disturbance of suspended sediments and operational discharges associated with MODU circulation.

Impacts are expected to be largely confined to the immediate vicinity of the well location and will occur over a relatively short duration. Wellbore contents and fluids are to be displaced and circulated before being discharged to the sea under controlled conditions in accordance with operational procedures. The discharges include weighted drilling mud, cement contaminated mud, water, barite, and cement polymers. A further discharge of up to 1,312 tonnes of drilling fluid may be conducted during the well plug and abandonment process. These discharges are expected to be localised and settle on the seabed near the well site, with natural dilution and dispersion processes within the open marine environment assisting recovery following the completion of activities.

MODU circulation and surface handling operations may result in discharges to the marine environment; however, embedded mitigation measures, including adherence to discharge management procedures, pollution prevention requirements and operational controls, will minimise the likelihood and magnitude of adverse effects on seawater quality.

The removal of temporary subsea infrastructure may also generate short-term and localised seabed disturbance, although effects are anticipated to be limited in extent.

In summary, with regard to their significance, impacts expected on seawater quality during the demobilisation and well abandonment phase are assessed as negative (-), of negligible intensity (IN=1), within the project footprint (EX=1), immediate (MO=4), temporary (PE=1), short-term reversible (RV=1), synergistic (SI=2), direct (EF=4), irregular (PR=1), with short-term restoration (MC=2), and cumulative (AC=4). In terms of their overall significance, these impacts are assessed as **moderate**. Following the implementation of prevention and mitigation measures described in Chapter 11 of this ESIA, residual impacts are assessed as **minor**.

| Impacts on Seawater Quality                      |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |     |                            |                     |                              |
|--------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|-----|----------------------------|---------------------|------------------------------|
| Project Activities / Elements                    | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |     | Valued Receptor Assessment | Impact Significance | Residual Impact Significance |
| MODU circulation and surface handling operations | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 24                    | Low | High                       | MODERATE            | MINOR                        |
| Removal of temporary subsea infrastructure       | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 24                    | Low | High                       | MODERATE            | MINOR                        |

## 10.1.8.2 Surface water and groundwater

### 10.1.8.2.1 Drilling preparation and mobilisation phase

During mobilisation, potential impacts on the qualitative and quantitative characteristics of surface water and groundwater are limited to the temporary operation of the shore base within the Port of Igoumenitsa.

No groundwater abstraction, surface water abstraction or wastewater discharges to inland surface waters are planned.

Installation activities may include the placement of temporary equipment and facilities within existing operational areas and connection to existing port services, where required. These works can temporarily

alter surface drainage patterns by introducing compacted operational surfaces, which may change the way rainfall runoff is collected and conveyed within the site. This may slightly alter runoff behaviour during rainfall events, increasing or concentrating surface water flow locally within the shore base footprint. However, any alterations to surface water drainage are expected to be minimal and reversible due to the small area of operations and the fact that the construction takes place within an existing port environment.

With respect to groundwater, the principal consideration is subsurface interaction during any shallow excavation or installation of service trenches, or utility connections. Where shallow digging is required (e.g. for power cables), there is a theoretical potential for localised disturbance of near-surface soils. However, in a port setting such as Igoumenitsa, groundwater is typically already influenced by existing infrastructure and paved operational areas within the port, as well as saline intrusion.

The small onshore workforce will utilise existing or temporary welfare facilities, as appropriate. Associated wastewater will be managed through existing port services or authorised contractors, eliminating any direct discharge to soil, surface water or groundwater. No measurable effects on the quality or availability of surface water or groundwater resources are anticipated from the temporary mobilisation activities, as there will be no wastewater releases.

In summary, with regard to their significance, the impacts on surface water and groundwater during the mobilisation phase are assessed as negative (-), with negligible intensity (IN = 1), localised spatial extent (EX = 1), occurring immediately during mobilisation activities (MO = 4), coincident with the mobilisation period (PE = 1), short-term and fully reversible (RV = 1), with low to moderate synergistic interaction effects (SI = 1-2), direct (EF = 4), discontinuous in nature (PR = 1), characterised by short-term recovery potential (MC = 2), and non-cumulative (AC = 1). In terms of their overall significance, these impacts are assessed as **minor**.

| Impacts on surface water and groundwater          |            |                |             |             |                  |                    |             |             |                  |               |                   |                       |            |                            |                     |
|---------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|-------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                     | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synerg (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| Onshore base equipment and utilities installation | -          | 1              | 1           | 4           | 1                | 1                  | 1           | 4           | 1                | 2             | 1                 | 20                    | Negligible | Low                        | NEGLIGIBLE          |
| Onshore loading/unloading or staging              | -          | 1              | 1           | 4           | 1                | 1                  | 2           | 4           | 1                | 2             | 1                 | 21                    | Low        | Low                        | NEGLIGIBLE          |

#### 10.1.8.2.2 Exploration drilling operations phase

During drilling operations, the Project will not require abstraction of freshwater from local surface water bodies or groundwater resources and therefore will not affect the quantitative status of these water resources. Freshwater requirements for the MODU will be met primarily through onboard desalination systems, eliminating the need for routine abstraction of potable water from onshore water resources. As a contingency measure, provision has been made for the temporary supply of up to approximately 6,000 barrels (approximately 954 m<sup>3</sup>) of potable water from shore facilities in the unlikely event of a prolonged outage of the onboard desalination systems. This represents a one-off contingency requirement rather than

a routine operational demand and is not expected to place a measurable burden on the regional water supply system or affect the quantitative status of local surface water or groundwater resources.

Surface runoff on operational areas such as container yards, waste storage areas and vehicle movement zones will be collected through the existing port stormwater drainage network, and small amounts of hydrocarbons, sediments or other minor operational residues may be present on paved surfaces. However, this pathway is expected to be of limited significance due to the operation of the port drainage system and the application of standard good practice measures, including the use of bunded storage, covered waste containers, spill prevention controls and the separation of clean and potentially operational areas.

Onshore wastewater generation will remain limited to sanitary wastewater from the small shore base workforce, managed through existing or temporary welfare facilities, as appropriate, with wastewater managed through existing port services or authorised contractors, without discharge to the environment.

Offshore wastewater generated onboard the MODU and support vessels will be managed within vessel systems in accordance with MARPOL requirements and discharged offshore under controlled conditions or retained for onshore disposal where required.

Potential impacts on onshore surface water or groundwater would be limited to accidental spills of fuels, oils or chemicals associated with material handling, storage or refueling activities at the shore base. Such events are considered unlikely due to the implementation of secondary containment, designated storage areas, spill prevention measures and emergency response procedures.

In summary, with regard to their significance, the impacts on surface water and groundwater during the drilling operations phase are assessed as negative (-), of negligible intensity (IN=1), localised to the onshore port area (EX=1), immediate (MO=4), temporary throughout the drilling period (PE=1), short-term and fully reversible following cessation of activities (RV=1), with limited synergistic effects with existing port operations (SI=2), direct (EF=4), either periodic or occasional depending on the activity (PR=1-2), with short-term recovery after completion of drilling (MC=1), and non-cumulative (AC=1). Overall, these impacts are assessed as **negligible**.

| Impacts on surface water and groundwater                 |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|----------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                            | Nature (S) | Intensity (IN) | Extent (Ex) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| Logistics base chemicals management                      | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 2                | 1             | 1                 | 21                    | Low        | Low                        | NEGLIGIBLE          |
| Logistics base waste management (including HW)           | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 2                | 1             | 1                 | 21                    | Low        | Low                        | NEGLIGIBLE          |
| Logistics base drainage (discharge of rainwater run-off) | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | Low                        | NEGLIGIBLE          |

### 10.1.8.2.3 Demobilisation and abandonment phase

During demobilisation and abandonment, wastewater generation at the shore base will progressively decrease as personnel, equipment and temporary facilities are removed. Existing or temporary welfare facilities will remain available as required, with associated wastewater managed through existing port

services or authorised contractors until shore-base activities cease. No discharges to surface water or groundwater are anticipated, and no abstraction of freshwater resources will occur.

Waste from drilling operations, including non-hazardous and hazardous waste streams, will be temporarily staged at the shore base before being collected by licensed waste contractors and transported to authorised treatment, recovery or disposal facilities. Collection activities will involve vehicle movements, loading operations and the handling of sealed waste containers. Waste will be segregated, packaged and stored in appropriate containers in accordance with the Project Waste Management Plan, while hazardous wastes will be handled within designated containment areas and removed from the site as soon as practicable.

Measures for the safe management of waste will minimise the likelihood of spills reaching the port drainage system or infiltrating the ground. As waste collections are temporary, infrequent and undertaken within the existing port, with stormwater drainage infrastructure, any effects on the qualitative or quantitative characteristics of surface water or groundwater are expected to be localised, short term and of negligible significance.

Following completion of demobilisation, all temporary activities at the shore base will cease and no residual sources capable of affecting the qualitative or quantitative characteristics of surface water or groundwater will remain.

In summary, with regard to their significance, the impacts expected on surface water and groundwater during the demobilisation and abandonment phase are assessed as negative (–), of negligible intensity (IN=1), localised (EX=1), immediate (MO=4), coincident with demobilisation activities (PE=1), short-term reversible (RV=1), non-synergistic (SI=1), direct (EF=4), discontinuous (PR=1), of immediate recovery (MC=1), and non-cumulative (AC=1). In terms of their overall significance, these impacts are assessed as **negligible**.

| Impacts on surface water and groundwater  |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|-------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements             | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| Waste contractor collections (all wastes) | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | Low                        | NEGLIGIBLE          |

## 10.1.9 Impacts on the anthropogenic environment

### 10.1.9.1 Spatial planning and land uses

This section assesses the potential impacts of the Project on spatial planning and land use, considering the baseline conditions presented in the ESBS Section 2.6.1 (Annex 02) and applying the impact assessment methodology described above. The assessment considers the extent to which Project activities may interact with existing spatial planning arrangements, designated land uses and the functional use of land during the preparation, drilling operations and demobilisation phases.

As established in the baseline, the offshore Project area (Block 2) contains no permanent settlements, terrestrial land uses or fixed infrastructure. Human activity within the concession area is exclusively maritime

in nature and comprises commercial shipping, fisheries and other sea uses, which are assessed separately in Section 10.1.9.1.2 (Maritime Uses). Consequently, the present assessment focuses primarily on the temporary interaction of the Project with the existing onshore logistical facilities required to support offshore drilling.

The onshore component of the Project is confined to existing operational facilities within the Port of Igoumenitsa and Corfu International Airport. The Port of Igoumenitsa will function as a temporary logistics base for the storage, handling and transfer of drilling equipment, materials and wastes, while Corfu International Airport will support helicopter transfers of personnel between shore and the Mobile Offshore Drilling Unit (MODU). Project activities will be undertaken entirely within existing operational areas that are already designated for port and airport functions. No permanent infrastructure, land acquisition, reclamation, dredging, rezoning or modification of existing planning designations will be required.

The relevant VR for this assessment is Spatial Planning and Land Use, which has been assigned **medium significance**. Although the Project does not involve permanent occupation or conversion of land, temporary use of operational areas within the Port of Igoumenitsa and the establishment of a temporary helicopter support facility at Corfu International Airport represent direct interactions with existing land uses. The receptor significance also reflects the strategic planning context within which the Project is located, including the Regional Spatial Frameworks for the Ionian Islands and Epirus, which recognise the importance of offshore hydrocarbon exploration and associated port infrastructure while requiring compliance with environmental safeguards. The receptor is therefore considered to be of moderate importance because Project activities interact with existing spatial planning arrangements, without however altering them.

### Regulatory compatibility

The compatibility assessment presented in Chapter 5 (Section 5.7) of this ESIA, examining the Project against the applicable spatial and urban planning frameworks in force in the study area, provides direct support for the assessment and is summarised below insofar as it is relevant to spatial planning, land use and settlement structure.

At national and regional strategic level, the Project is not in conflict with the goals of the General Framework for Spatial Planning and Sustainable Development (GFSPSD, GG 128/A/03-07-2008). Of particular relevance, the Regional Spatial Framework (RSF) of the Region of Epirus (MD ΥΠΕΝ/ΔΧΩΠΣ/78523/1208, GG 286/ΑΑΠ/28-11-2018) explicitly anticipates the Project type: among its identified priority functions for future port diversification at Igoumenitsa, the RSF Epirus lists *“support activities related to hydrocarbon exploration and production in the Northern Ionian and Epirus regions”* alongside cruise, bunkering and commercial freight functions. The Project's use of the port as a temporary logistics base for the Asopus-1 exploration well therefore represents an application of a function that the Region's own strategic spatial framework has proactively identified as a suitable future role for the port, rather than an unplanned or unanticipated land use.

At the level of onshore site-specific zoning, the Project's logistics base is located entirely within the Port Zone (designated Port Zone B4.5 under the approved GUP of the Municipality of Igoumenitsa, GG 575/AAP/31.12.2010). Determination of land uses within the Port Zone falls outside the scope of the GUP and is instead the statutory responsibility of the Port Planning and Development Committee (ESAL), under Article 19 of Law 2932/2001 (GG 145/A/2001) and Law 2971/2001 (GG 285/A/2001). The Port Master Plan, most recently revised by MD 8216/126/14, defines permitted land uses within the port zone as



“Services”, “Commercial Zone” and “Warehouses”, categories that expressly encompass logistics, storage, staging and support-service functions of the type required by the Project. The Project's onshore activities therefore fall within land uses already permitted under the current, approved zoning instrument, and do not require any amendment to the GUP, the Port Master Plan, or the ESAL-approved zoning.

The Special Spatial Planning and Sustainable Development Framework for Industry (JMD 11508/2009, GG 151/AAP/2009) similarly confirms that the Igoumenitsa area is designated for a complementary industrial/logistics role linked to the port's international gateway function, and that the Project's onshore facilities, being sited within the Port Zone, do not conflict with this Framework or with the National Spatial Planning Framework for Industry.

Collectively, these findings provide an important basis for the impact assessment presented below, supporting the conclusion that interactions with the Spatial Planning and Land Use receptor are limited to the temporary operational use of existing infrastructure and do not result in permanent changes to settlement structure, land use or the statutory planning framework.

#### 10.1.9.1.1 Drilling preparation and mobilisation phase

During the mobilisation phase, onshore activities affecting land use will be confined to the temporary establishment of the logistics base within the existing operational area of the Port of Igoumenitsa. These activities include the installation of temporary perimeter fencing, signage and directional markings, utility connections, prefabricated office units and welfare/sanitation facilities, and the mobilisation and (if applicable) installation of a wharf crane, together with onshore loading, unloading and staging of equipment and materials. At Corfu International Airport, mobilisation activities are limited to the installation and subsequent use of a temporary helicopter hangar within the existing operational airport area to facilitate crew transfers between the airport and the MODU.

Mobilisation activities are planned to take place within the boundaries of the existing, leased operational port area, within a Port Zone whose approved land use designation (Services / Commercial Zone / Warehouses, per the ESAL-approved Port Master Plan, MD 8216/126/14) already permits such activities. No change to the GUP of Igoumenitsa (GG 575/AAP/31.12.2010), to the ESAL zoning of the Port Zone, or to the port's concession or operational terms is required. The activities will be undertaken subject to the applicable port allocation, leasing and operational approvals. Similarly, the temporary helicopter hangar to be installed at Corfu International Airport will occupy existing airport land without altering the airport's land use designation, capacity, or management arrangements. The activities will be undertaken subject to applicable airport, aviation and operational approvals.

The installation of the wharf crane and onshore loading/unloading and staging activities represent a marginally greater, though still localised and temporary, interaction with land use, insofar as they may require the temporary allocation of specific operational areas within the port that would otherwise be available for routine port business and may involve minor demand on local contractors for crane mobilisation and civil works.

In summary, with regard to their significance, the impacts on spatial planning and land use during the mobilisation phase are assessed as negative (–), with negligible intensity (IN = 1), localised spatial extent confined to the project footprint (EX = 1), occurring immediately during mobilisation activities (MO = 4),



coincident with the mobilisation period (PE = 1), short-term and fully reversible (RV = 1), with no to low synergistic interaction with other port-based logistics activities (SI = 1–2), direct effect (EF = 4), discontinuous / occasional in nature (PR = 1), characterised by immediate recovery potential (MC = 1), and non-cumulative (AC = 1). Given the confirmed regulatory compatibility set out above, these impacts remain, in terms of their overall significance, **negligible**.

| Impacts on Spatial Planning and Land Use                              |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|-----------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                                         | Nature (S) | Intensity (IN) | Extent (Ex) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| Install temporary fencing around entire base perimeter                | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | Medium                     | NEGLIGIBLE          |
| Mobilise wharf crane to designated crane area                         | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          |
| Install wharf crane (if applicable)                                   | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          |
| Install utility connections                                           | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | Medium                     | NEGLIGIBLE          |
| Install prefabricated office units, welfare and sanitation facilities | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | Medium                     | NEGLIGIBLE          |
| Onshore loading/unloading or staging                                  | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          |

#### 10.1.9.1.2 Exploration drilling operations phase

During the drilling operations phase, onshore land-use interactions will be limited to the continued operation of the logistics base within the Port of Igoumenitsa, comprising the routine use of facilities, equipment and vehicles in support of offshore operations, and the associated, temporary occupation of designated port areas for storage, waste staging and vessel support. As set out in the ESBS Section 2.6.1.4 (Annex 02) and confirmed by the Chapter 5 compatibility assessment, the Project's use of the port will take place entirely within the existing leased operational area, within land uses already permitted, and will not require any change to established land use designations, port zoning arrangements or existing infrastructure.

The principal potential interaction with land use during this phase concerns the temporary allocation of port space to Project logistics functions, which may result in localised and intermittent disruption to the normal pattern of port activities (e.g. competing demand for quay space, storage areas or vehicle circulation routes). Given that the Port of Igoumenitsa is an established, multi-user commercial and passenger port with substantial existing operations, and that the Project's onshore footprint and workforce (approximately six shore-based personnel) are modest in scale, this interaction is expected to remain minor and readily managed through routine coordination with the Igoumenitsa Port Authority.

No new construction, land take, or capacity expansion is associated with these activities, and no interaction with land use beyond the existing port boundary is anticipated. Corfu International Airport will continue to be used for helicopter transfers and operation of the temporary hangar within the existing airport area, without affecting its land use, capacity or operational arrangements.

In summary, with regard to their significance, the impacts on spatial planning and land use during the drilling operations phase are assessed as negative (-), of negligible intensity (IN = 1), localised to the operational footprint of the port (EX = 1), immediate (MO = 4), temporary throughout the drilling period (PE = 1), short-term and fully reversible following cessation of activities (RV = 1), with moderate synergistic interaction with existing port operations (SI = 2), direct (EF = 4), continuous throughout the drilling campaign (PR = 4), with short-term recovery potential (MC = 1), and non-cumulative (AC = 1). Overall, these impacts are assessed as **minor**.

| Impacts on Spatial Planning and Land Use                 |            |                |             |             |                  |                    |             |             |                  |               |                   |                       |     |                            |                     |
|----------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|-------------|-------------|------------------|---------------|-------------------|-----------------------|-----|----------------------------|---------------------|
| Project Activities / Elements                            | Nature (S) | Intensity (IN) | Extent (Ex) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synerg (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |     | Valued Receptor Assessment | Impact Significance |
| Operation of facilities, equipment and vehicles          | -          | 1              | 1           | 4           | 1                | 1                  | 2           | 4           | 4                | 1             | 1                 | 23                    | Low | Medium                     | MINOR               |
| Logistics base operation - disruption to port activities | -          | 1              | 1           | 4           | 1                | 1                  | 2           | 4           | 4                | 1             | 1                 | 23                    | Low | Medium                     | MINOR               |

### 10.1.9.1.3 Demobilisation and abandonment phase

Demobilisation activities will involve the dismantling and removal of the temporary logistics base from the Port of Igoumenitsa, including containers, prefabricated units, fencing, signage and utility connections, together with the removal of the temporary helicopter hangar from Corfu International Airport, except for any assets agreed with the relevant facility operator to be retained or otherwise transferred. These activities allow the relevant areas to be handed back in the condition agreed with the relevant facility operator.

Since no permanent structures will have been constructed and no change to land use designation, the demobilisation phase is expected to fully reinstate baseline land-use conditions at both the port and the airport, with the cessation of Project-related occupation of operational space and the associated release of that space for routine port and airport activities. This represents a minor beneficial interaction with the land use / spatial planning receptor, associated with the removal of temporary occupation and the restoration of full operational availability to the port and airport.

In summary, with regard to their significance, the impacts on settlement structure and land use during the demobilisation and abandonment phase are assessed as positive (+), of minor intensity (IN = 2), localised spatial extent (EX = 1), occurring immediately during demobilisation activities (MO = 4), coincident with the demobilisation period (PE = 1), short-term and fully reversible (RV = 1), non- to lowly synergistic (SI = 1), direct effect (EF = 4), continuous throughout the demobilisation period (PR = 4), with short-term recovery potential (MC = 2), and non-cumulative (AC = 1). In terms of their overall significance, these impacts are assessed as **positive**.

| Impacts on Spatial Planning and Land Use   |            |   |                |   |             |   |             |   |                  |   |                    |    |              |        |             |  |                  |  |               |  |                   |  |                       |  |                            |  |                     |  |
|--------------------------------------------|------------|---|----------------|---|-------------|---|-------------|---|------------------|---|--------------------|----|--------------|--------|-------------|--|------------------|--|---------------|--|-------------------|--|-----------------------|--|----------------------------|--|---------------------|--|
| Project Activities / Elements              | Nature (S) |   | Intensity (IN) |   | Extent (EX) |   | Moment (MO) |   | Persistence (PE) |   | Reversibility (RV) |    | Synergy (SI) |        | Effect (EF) |  | Periodicity (PR) |  | Recovery (MC) |  | Accumulation (AC) |  | Impact Magnitude (Im) |  | Valued Receptor Assessment |  | Impact Significance |  |
|                                            |            |   |                |   |             |   |             |   |                  |   |                    |    |              |        |             |  |                  |  |               |  |                   |  |                       |  |                            |  |                     |  |
| Dismantling and removal from the port area | +          | 2 | 1              | 4 | 1           | 1 | 1           | 4 | 4                | 2 | 1                  | 26 | Low          | Medium | POSITIVE    |  |                  |  |               |  |                   |  |                       |  |                            |  |                     |  |

| Impacts on Spatial Planning and Land Use |   |   |   |   |   |   |   |   |   |   |   |    |                     |
|------------------------------------------|---|---|---|---|---|---|---|---|---|---|---|----|---------------------|
| Removal of helicopter hangar             | + | 2 | 1 | 4 | 1 | 1 | 1 | 4 | 4 | 2 | 1 | 26 | Low Medium POSITIVE |

### 10.1.9.2 Maritime uses

This section assesses the potential impacts of the Project on maritime uses, drawing among others on the baseline characterisation presented in ESBS Sections 2.6.2 and 3.3.1.5 (Annex 02), together with additional information received through consultation with the competent authorities. Maritime uses comprise the principal human activities undertaken within the wider Project area and include shipping and navigation, commercial fisheries, aquaculture, maritime tourism, submarine telecommunications infrastructure, military training and exercise activities, and other offshore installations (oil and gas, and offshore renewables).

In addition to the information included in the ESBS, consultation with the Hellenic Coast Guard (Central Port Authority of Corfu, the Central Port Authority of Igoumenitsa) and the Hellenic Navy Hydrographic Service has provided further information on maritime activities and constraints within and around Block 2. The Central Port Authority of Corfu (Ref. 2131.1/4152/2026, dated 16 July 2026) confirmed that Block 2 is an open navigation area that may be transited by vessels engaged in international and domestic voyages, including cargo vessels, tankers, general cargo vessels and other professional or private craft, although no designated shipping routes or statistical data on vessel passage frequency are available. No scheduled passenger, passenger/vehicle or cargo services were reported to transit the area. Increased activity by recreational craft, sailing vessels, professional tourist vessels, large private yachts and, depending on voyage plans and operational requirements, cruise vessels may occur particularly during the summer period. The same authority confirmed that there are no designated anchorage areas or permanent or seasonal fishing zones in the wider marine area, although professional and coastal fishing activities occur in the wider area. No areas of high fishing or tourist vessel visitation were identified within the area of interest. The area may also be used, as required, for search and rescue (SAR), surveillance and policing, and marine pollution response operations, while scientific, oceanographic, hydrographic and geophysical surveys may take place subject to the relevant approvals and permits.

The Central Port Authority of Igoumenitsa (Ref. 2121.4/2502/26, dated 7 July 2026) additionally confirmed that ocean-going vessels engaged in international maritime transport may transit the wider area, although the Authority does not hold information on such traffic as the area falls outside its jurisdiction. It further noted that scheduled passenger/vehicle ferry routes serving the Port of Igoumenitsa and connecting with Italian ports operate through the Corfu Straits and along the coast of Thesprotia and therefore do not pass through or lie adjacent to Block 2.

In relation to military activities and submarine telecommunications infrastructure, the Hellenic Navy Hydrographic Service, in correspondence dated 3 July 2026 in response to a request for geospatial data concerning maritime activities within Block 2, confirmed that there are no shipwrecks, permanently established military exercise areas, or areas currently temporarily reserved through NAVTEX and/or Notices to Mariners within Block 2.

This information, together with a dedicated Shipping and Navigation Assessment commissioned to quantify vessel traffic interactions with the proposed exclusion zone (Annex 08), has been used to refine the assessment of maritime use interactions presented below.

Unlike the spatial planning and land use receptor, which is limited to the temporary use of existing onshore infrastructure, the maritime uses receptor directly overlaps with the offshore Project area. Project activities, particularly the temporary establishment of the statutory 500 m safety exclusion zone, support vessel movements between the Port of Igoumenitsa and the well location, and temporary operational restrictions during drilling, have the potential to interact with existing maritime activities within Block 2 and the surrounding waters.

The maritime uses valued receptor has therefore been assigned **high significance**, reflecting the strategic importance of shipping and navigation within the northern Ionian Sea, the presence of commercial fishing grounds in the wider Project area, and the temporary restriction of access associated with offshore drilling operations. Other maritime uses, including aquaculture, maritime tourism, submarine telecommunications cables, military activities and offshore energy installations, have also been considered in the assessment; however, based on the baseline review and information obtained from the competent authorities, these receptors are either spatially separated from the Project or do not occur within the immediate vicinity of Block 2. Consequently, they contribute to the overall receptor significance but are expected to experience limited or no direct interaction with Project activities.

### Maritime Spatial Planning Framework

The Project is located within the offshore exploration concession designated as Block 2 in the northern Ionian Sea, an authorised maritime use under Law 4525/2018 and the national maritime spatial planning framework established under L.4546/2018, as amended, and the National Spatial Strategy for Maritime Space (NSPSMS), approved by Cabinet Act 6/17-04-2025. Block 2 falls within Spatial Unit 4 of the NSPSMS. No designated Maritime Spatial Planning measure or statutory marine zoning provision has been identified that would preclude hydrocarbon exploration within Block 2, and the Project remains compatible with other lawful maritime activities through the implementation of standard maritime notification procedures (NAVTEX, Notices to Mariners) and navigational safety measures during drilling.

### Shipping and Navigation

Shipping and navigation represent the maritime use with the greatest potential spatial interaction with the Project. ESBS Section 2.6.2.2 (Annex 02) identifies well-defined NW–SE commercial shipping corridors linking the Adriatic with western Greece, together with cargo, tanker and passenger ferry routes connecting Italian Adriatic ports with Igoumenitsa and Patras. The proposed Asopus-1 well lies close to, but outside, the highest-density shipping routes mapped by EMODnet in the wider area.

Correspondence from the Central Port Authority of Igoumenitsa (Ref. 2121.4/2502/26, dated 7 July 2026) and the dedicated Shipping and Navigation Assessment prepared for the Project (Annex 07), provides additional site-specific information and a more detailed characterisation of vessel traffic in proximity to Asopus-1. This information refines and supplements, but does not materially alter, the baseline understanding of shipping and navigation presented in the ESBS. In particular, the Shipping and Navigation Assessment confirms the presence of passing commercial, tanker and passenger vessel traffic in the wider area, while indicating that the highest-density traffic is concentrated primarily to the northeast and east of Asopus-1 and that the well location is outside the principal high-density shipping routes. The assessment also identified no regularly scheduled Ro-Pax route within the study area, consistent with the Central Port Authority of Igoumenitsa's confirmation that the principal Igoumenitsa–Italy Ro-Pax route operates through the Corfu Channel and does not intersect or adjoin Block 2.

The findings of the Shipping and Navigation Assessment, including the characterisation of vessel traffic and assessment of potential navigational hazards, are used to inform the assessment of effects associated with the temporary 500 m safety exclusion zone around the MODU in the following sections.

### Commercial Fisheries

As set out in ESBS Section 2.6.2.3 (Annex 02), the Asopus-1 well is located within GSA 19 (Western Ionian Sea), while Block 2 as a whole spans GSA 19 and GSA 20. Commercial fishing activity in the wider study area is undertaken by both Greek and Italian small-scale coastal fleets, together with a lower level of offshore fishing effort. Global Fishing Watch data indicate that, although fishing intensity at the Asopus-1 location is lower than in coastal waters, the area forms part of a wider seascape regularly traversed by commercial fishing vessels. In addition, the GFCM deep-water Fisheries Restricted Area, which bans towed dredges and trawl nets in waters deeper than 1,000 m, already excludes bottom-contact fishing gear from those portions of Block 2 exceeding this depth, independently of the Project's exclusion zone. Fisheries are therefore identified as the maritime use most likely to interact directly with Project operations, principally through the temporary safety exclusion zone and the movement of support/supply vessels and are assessed accordingly in the phase-specific tables below.

### Aquaculture

ESBS Section 2.6.2.4 (Annex 02) confirms that aquaculture activity in the wider study area is confined to designated Aquaculture Development Areas (ADAs) along the north-eastern coast of Corfu (Code E.5) and within the POAY of Thesprotia, both located within sheltered coastal waters. No ADA, Organised Aquaculture Development Area (OADA) or individual aquaculture unit has been identified within Block 2 or in the vicinity of the Asopus-1 well. Given this spatial separation, no interaction between Project activities and aquaculture operations is anticipated during any Project phase, and aquaculture is scoped out of the phase-specific assessment tables presented below.

### Maritime Tourism and Recreational Navigation

ESBS Section 2.6.2.5 (Annex 02) identifies the principal recreational navigation corridors (the Corfu Channel, the Corfu–Paxos–Antipaxos route, and coastal cruising routes along the Epirus mainland) as being concentrated in the eastern and south-eastern portions of the wider Project area, well inshore of the Block 2 boundary. The open-sea location of the Asopus-1 well does not constitute a principal recreational navigation or cruise corridor, although it may occasionally be crossed by vessels undertaking longer offshore passages between Greece and Italy. Given the limited and infrequent nature of this potential interaction, maritime tourism is not carried forward as a discrete line item in the phase-specific impact tables, but any residual interaction with occasional offshore-passage traffic is captured within the general vessel-traffic assessment addressed under Shipping and Navigation above.

### Submarine Telecommunications Cables

ESBS Section 2.6.2.6 (Annex 02) identifies three international submarine cable systems (Eagle, Jonah and AAE-1) within the wider study area, based on publicly available information and open-source cable databases. Consultation with Cosmote has provided additional operator-specific GIS data for two of its submarine cable routes between Bari and Kokkini, located approximately 24 km and 29 km from the proposed Asopus-1 well. In addition, the LOT 01 geophysical survey campaign identified four cable segments within the surveyed area (ESBS Section 3.3.1.5, Table 38 – Annex 02). Three groups of detected cable

segments (EER001\_CBL-02, -03 and -04) were interpreted by the survey team as corresponding to the AAE-1 system, based on their characteristics and consistency with the route shown in the Submarine Cable Map database. The fourth detected cable (EER001\_CBL-01), located in the north-eastern part of the surveyed area, has not been conclusively attributed to a specific owner or cable system. As confirmed through correspondence with the Hellenic Navy Hydrographic Service, submarine cable records held in its Chart Database are classified by the respective cable owners, and any future requests for geospatial data from the Hydrographic Service require prior authorisation from the Ministry of National Defence.

The operator-provided GIS data and Project-specific geophysical survey findings provide the most direct evidence available for characterising submarine cable infrastructure in the vicinity of the Project, while the open-source datasets provide wider regional context. The interpretation of the survey-detected cable segments as corresponding to named cable systems has not been independently confirmed by the respective cable owners and is therefore treated with appropriate caution in the assessment. As a precautionary measure, and consistent with International Cable Protection Committee (ICPC) guidance, the Project will notify Cosmote and the relevant charting authorities of the planned drilling and vessel-transit operations prior to mobilisation, notwithstanding the confirmed separation distances between the Project footprint and the identified cable routes. On this basis and given that no cable route has been identified within the drilling footprint or 500 m safety exclusion zone, no direct physical interaction between Project activities and submarine cables is anticipated during any phase of the Project. The residual risk will be further addressed through official notification and avoidance procedures.

### **Military Training and Exercise Areas**

In response to the Project's request for information on military exercise areas, the Hellenic Navy Hydrographic Service confirmed that there are no permanently established exercise areas, and no temporary restricted or reserved areas currently in force through NAVTEX broadcasts and/or Notices to Mariners, within the boundaries of Block 2 and the location of the Asopus-1 well. In line with the ESBS baseline findings of Section 2.6.2.7 (Annex 02), no interaction between Project activities and military training or exercise areas is identified for any Project phase; this receptor is therefore scoped out of the phase-specific tables below.

### **Other Offshore Installations**

As set out in ESBS Section 2.6.2.8 (Annex 02), no offshore oil and gas installation or operational offshore renewable-energy installation has been identified within the immediate area of the Asopus-1 well or within a 100 km buffer around it. The nearest oil and gas installation (AQUILA 2, closed down) and the nearest planned offshore wind farm areas ("Santa Maria di Leuca" and "Puglia 1", approximately 10–15 km distant, in Italian waters) are sufficiently separated, both spatially and temporally (in the case of planned wind farms, which are not yet under construction), that no direct interaction with Project activities is anticipated in any phase. This receptor is accordingly scoped out of the phase-specific tables below.

The interactions identified for shipping, fisheries and general vessel-related activities are carried forward into the three phase-specific assessments below, applying the Methodology as described in Section 10.1.1.3.1 and the Maritime Uses VR significance of High.



#### 10.1.9.2.1 Drilling Preparation and Mobilisation Phase

During the mobilisation phase, interactions with maritime uses arise principally from the temporary occupation of port waters and quay space by the wharf crane (if applicable), onshore loading, unloading and staging of drilling equipment and materials, and the transit of the MODU and its support vessels from their point of mobilisation to the Asopus-1 well site. These activities are transitory and spatially confined to the Port of Igoumenitsa's operational waters and the MODU's transit route, and do not involve the establishment of the drilling safety exclusion zone, which is only implemented once the MODU is on station.

The Shipping and Navigation Assessment prepared for the Project (Annex 07) provides the relevant site-specific baseline context for vessel traffic in the vicinity of Asopus-1. The assessment is based on seven months of AIS data collected between 1 May and 30 November 2025, supplemented by a further five months of AIS data covering 1 December 2025 to 30 April 2026. Over the full 12-month period, an average of 18 unique vessels per day was recorded within the 10 nm study area, with traffic patterns broadly consistent with those observed during the initial seven-month assessment. Higher-density traffic was concentrated primarily in the northeastern part of the study area, including a NW–SE route east of Asopus-1 associated largely with regularly scheduled Roll-on/Roll-off (RoRo) cargo vessels, while lower-density areas were identified to the west and south. The Asopus-1 location itself was characterised as an area of medium vessel density relative to the wider study area. Within 1 nm of Asopus-1, an average of one unique vessel every one to two days was recorded over the full 12-month period.

It is noted that hazards associated with the transit of Project vessels within port limits and along the passage between Igoumenitsa and Asopus-1 are not examined within the Shipping and Navigation Assessment, as these are expected to be managed by the relevant ports and through compliance with standard navigational safety management and applicable port and maritime procedures. The assessment instead focuses on hazards arising while the MODU is located at the Asopus-1 site, which are addressed in Section 10.1.9.2.2 below. Accordingly, the mobilisation-phase assessment draws on the Shipping and Navigation Assessment primarily to characterise the surrounding vessel traffic environment and to provide context for the potential interaction of Project vessel movements with other maritime users during mobilisation.

The presence of higher-density commercial traffic elsewhere within the wider study area, including the RoRo route identified to the east and northeast of Asopus-1, is recognised as part of the navigation context for mobilisation. However, the Asopus-1 location is not itself situated within this highest-density traffic routeing, and the temporary transit of the MODU and support vessels will be managed through standard navigational safety measures, as described below.

This is consistent with confirmation received from the Central Port Authority of Corfu (Ref. 2131.1/4152/2026, dated 16 July 2026) and the Central Port Authority of Igoumenitsa (Ref. 2121.4/2502/26, dated 7 July 2026), which confirms that Block 2 is an open navigation area that may be transited by vessels engaged in international and domestic voyages, but that no designated shipping routes or scheduled passenger, passenger/vehicle or cargo services pass through Block 2. The Central Port Authority of Igoumenitsa further confirmed that the principal Igoumenitsa–Italy Ro-Pax route operates through the Corfu Strait and along the coast of Thesprotia rather than through or adjacent to Block 2. The Hellenic Navy Hydrographic Service further confirmed, in correspondence dated 3 July 2026, that there are no permanently established military exercise areas, temporarily reserved areas or shipwrecks within Block 2; these features are therefore not considered to have the potential to interact with mobilisation activities.



The temporary movement of the MODU and support vessels will be managed through appropriate passage planning, navigational watches, AIS operation, VHF communications and compliance with applicable Collision Regulations (COLREGs), Safety of Life at Sea (SOLAS) requirements and port requirements. These measures will enable the Project vessels to identify and respond appropriately to other vessels encountered during mobilisation and to maintain safe separation in accordance with applicable navigation requirements.

Within the Port of Igoumenitsa, mobilisation activities are planned to take place within the boundaries of the existing leased operational port area and within a Port Zone whose approved land-use designation permits the relevant activities. The installation and mobilisation of the wharf crane, where applicable, together with onshore loading, unloading and staging activities, may require the temporary allocation of specific quay and adjacent water areas that would otherwise be available for routine port operations and vessel movements. These interactions are therefore expected to result in a marginal, localised and temporary disruption to normal port use, but will take place within an existing operational port environment and will be managed through coordination with the Port Authority and applicable port procedures.

In summary, with regard to their significance, the impacts on maritime uses during the mobilisation phase are assessed as negative (-), of negligible to low intensity (IN = 1-2), localised to the port operational footprint or the MODU transit corridor (EX = 1), occurring immediately upon commencement of the relevant activity (MO = 4), coincident with the mobilisation period (PE = 1), short-term and fully reversible (RV = 1), with low to moderate synergistic interaction with concurrent port and vessel traffic (SI = 2), direct in effect (EF = 4), discontinuous in occurrence (PR = 1), with immediate to short-term recovery potential (MC = 1), and non-cumulative (AC = 1). Given the High significance of the Maritime Uses receptor, impacts of negligible magnitude are elevated to Minor in the final significance rating; overall, impacts during this phase are assessed as **Minor**.

| Impacts on Maritime Uses                             |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                        | Nature (S) | Intensity (IN) | Extent (Ex) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| Mobilise wharf crane to designated crane area        | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               |
| Install wharf crane (if applicable)                  | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               |
| Onshore loading/unloading or staging                 | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               |
| Mobilisation of MODU to well site – power generation | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               |

#### 10.1.9.2.2 Exploration drilling operations phase

During the drilling operations phase, the principal interaction with maritime uses is the temporary establishment of the 500 m safety exclusion zone around the MODU for the duration of drilling (up to 90 days, conservatively assessed), together with routine support and supply vessel movements between the Port of Igoumenitsa and the well site. These activities may require temporary separation from or minor adjustment by other marine users operating in the immediate vicinity of the Project.

Other Project activities, including drillship dynamic positioning, drilling, wellhead and casing installation, WBM fluid and cuttings discharge, MODU and support/supply vessel power generation, vertical seismic profile (VSP) survey activities, MODU lighting and ROV operations, are expected to have only limited and highly localised interaction with maritime uses. These activities do not require additional exclusion areas or permanent changes to established navigation routes and, where relevant, are managed within the overall operational and maritime safety arrangements for the drilling campaign. The existing Igoumenitsa logistics base will continue to operate within the established port environment, with any interaction with other port users managed through normal port coordination procedures.

This phase corresponds to the period assessed in detail by the Shipping and Navigation Assessment (Annex 07), which applied the IMO Formal Safety Assessment (FSA) process (IMO, 2018) to the baseline vessel traffic characterised over a 12-month AIS dataset (18 unique vessels per day on average; cargo vessels 62%, tankers 20%, passenger vessels 11%, recreational vessels ( $\leq 24$  m) 6%; average vessel length 171 m, draught 7.4 m, average speed 12.7 kt). Within 1 nm of Asopus-1, an average of one vessel every one to two days was recorded over the 12-month period, falling to approximately one vessel every two to three days within 0.5 nm. The recorded traffic was predominantly tankers and containerships, including a band of routeing LPG tankers on a north-south bearing. While individual vessels have passed close to the well location, the baseline does not indicate a continuously occupied or high-density shipping route immediately surrounding Asopus-1.

Of particular relevance to the assessment of disruption to established maritime services, none of the regularly scheduled RoRo vessels operating in the wider study area, including services by DFDS Seaways, Ulusoy, Grimaldi Line and Polish Ocean Lines between Italian and Turkish ports, were recorded passing within 500 m of the well location during the 12-month baseline period, and only two occasions were recorded within 1 nm. No regularly scheduled Ro-Pax service was identified within the study area. The Central Port Authority of Igoumenitsa has also confirmed that the Igoumenitsa–Italy Ro-Pax route is routed through the Corfu Straits, clear of Block 2. The temporary Project safety zone is therefore not expected to materially interfere with established scheduled passenger or freight services.

Three shipping and navigation hazards were identified and assessed under the FSA methodology: (i) collision of a third-party vessel with a Project vessel; (ii) works causing disruption to passing vessel routeing/timetables; and (iii) vessel displacement leading to an increased risk of collision between third-party vessels. The assessment concluded that, with the embedded maritime safety measures in place, all three hazards are within the acceptable or tolerable-if-ALARP region. These measures include the MODU's status as restricted in ability to manoeuvre (RAM), associated collision risk management procedures, 24/7 watchkeeping, AIS and ARPA monitoring, appropriate lights and shapes, the temporary 500 m safety zone, promulgation of NAVTEX messages and Notices to Mariners by the Hellenic Coast Guard, an Emergency Response Plan (including a contingent Emergency Disconnect Sequence), and liaison with the fishing industry. Advance notice of operations to the main operators of regularly scheduled vessels will provide an additional precautionary measure.

The FSA findings therefore indicate that, although the temporary exclusion zone and vessel movements represent the principal maritime-use interaction, these are not expected to result in material disruption to established commercial navigation or an appreciable change in overall navigational risk, provided the identified controls are implemented.

Fishing vessel interactions were also considered: fishing vessels comprised approximately 1% of vessel tracks recorded in the study area (approximately one transit every four days over the 7-month period), with AIS data likely under-representing vessels of less than 15 m in length, which are not required to broadcast. GFCM data (as of April 2026) records 343 vessels authorised for demersal trawling in the Ionian Sea (222 Greek, 106 Italian and 15 Maltese flagged), the majority (85%) exceeding 15 m in length, some of which may operate in the vicinity of Asopus-1. This is consistent with the ESBS baseline confirmation that the GFCM Deepwater Fisheries Restricted Area, which bans towed dredges and trawl nets in waters deeper than 1,000 m, already excludes bottom-contact fishing gear from those portions of Block 2 exceeding this depth, independently of the Project's safety exclusion zone, and with correspondence from the Central Port Authority of Corfu confirming there are no designated anchorage areas or permanent/seasonal fishing zones in the wider area, although professional and coastal fishing activity occurs more generally in the region.

Navigational features of relevance to this phase include subsea cables (the closest charted cable passing approximately 1.1 nm to the west, broadly consistent with the Project-specific geophysical survey finding that the nearest identified AAE-1 cable segment passes a minimum of 2,692 m from the well), an ODAS meteorological/oceanographic buoy 7.5 nm to the northwest, and a charted explosives ground 6.6 nm to the north; there are no ports or harbours in the immediate vicinity, the nearest (Ammos Port and Mathraki Port, Othonoi/Diapontian Islands, and Porto Turistico di Santa Maria di Leuca, Italy) lying 23-29 nm distant and serving predominantly recreational and small ferry traffic. No permanently established or NAVTEX-activated military exercise areas, and no known shipwrecks, are present within Block 2 (Hellenic Navy Hydrographic Service, 3 July 2026).

In summary, with regard to their significance, the impacts on maritime uses during the drilling operations phase are assessed as negative, but predominantly of negligible to low intensity (IN = 1–2), with effects largely confined to the immediate Project footprint and the temporary safety exclusion zone and vessel transit corridor (EX = 1–2). Effects are immediate in onset (MO = 4), temporary and limited to the drilling campaign (PE = 1), short-term and fully reversible following cessation of the relevant activity (RV = 1), and generally non-synergistic or only weakly synergistic with concurrent maritime traffic (SI = 1). The majority of activities have a limited or indirect relationship with maritime users (EF = 1–2), with continuous interaction restricted principally to the temporary safety zone and routine vessel transfers and more occasional interaction associated with discrete activities such as VSP surveys (PR = 1–2). Recovery is expected to occur promptly following cessation of the relevant activity (MC = 1), and the effects are non-cumulative (AC = 1).

Given the High significance of the Maritime Uses receptor, the resulting impacts are predominantly **Minor**, with **Moderate** significance retained only for the principal direct interaction associated with the temporary MODU safety exclusion zone and support/supply vessel movements. The remaining activities, including drillship dynamic positioning, drilling and wellhead/casing installation, WBM discharges, MODU and support/supply vessel power generation, VSP activities, MODU lighting, ROV operations and logistics-base operation, are expected to result in Minor impacts on maritime uses because their interaction with maritime users is limited, localised, temporary and reversible, and they do not require additional restrictions on established navigation routes. For impacts categorized as Moderate, mitigation/prevention/remediation measures are proposed within the current report in order to reduce them to at least Minor. Following the implementation of the relevant measures, as proposed in Chapter 11 of the present report, the residual impacts are assessed as **Minor**.

| Impacts on Maritime Uses                                                            |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |                                  |
|-------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|----------------------------------|
| Project Activities / Elements                                                       | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
| MODU safety exclusion zone and support/supply vessel transfers                      | -          | 2              | 2           | 4           | 1                | 1                  | 1            | 4           | 4                | 1             | 1                 | 27                    | Low        | High                       | MODERATE            | MINOR                            |
| Drillship dynamic positioning (DP)                                                  | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 17                    | Negligible | High                       | MINOR               | MINOR                            |
| MODU drilling, wellhead and casing installation                                     | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 17                    | Negligible | High                       | MINOR               | MINOR                            |
| Discharge of water based fluids and cuttings to seabed (riserless drilling)         | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 17                    | Negligible | High                       | MINOR               | MINOR                            |
| Discharge of water based fluids and cuttings near sea surface (drilling with riser) | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 17                    | Negligible | High                       | MINOR               | MINOR                            |
| MODU and support/supply vessel power generation                                     | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 17                    | Negligible | High                       | MINOR               | MINOR                            |
| Vertical seismic profile (VSP) activities                                           | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                            |
| Support activities (movement of support vessels)                                    | -          | 2              | 2           | 4           | 1                | 1                  | 1            | 4           | 4                | 1             | 1                 | 27                    | Low        | High                       | MODERATE            | MINOR                            |
| Lighting from MODU                                                                  | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 4                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
| ROV Operation                                                                       | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                            |
| Operation of facilities, equipment and vehicles                                     | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 2                | 1             | 1                 | 18                    | Negligible | High                       | MINOR               | MINOR                            |
| Logistics base operation - disruption to port activities                            | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 2                | 1             | 1                 | 18                    | Negligible | High                       | MINOR               | MINOR                            |

### 10.1.9.2.3 Demobilisation and Abandonment Phase

Demobilisation activities involve the sealing and abandonment of the well (cement plug installation, MODU circulation and surface handling operations), the removal of any temporary subsea infrastructure, and the dismantling and removal, or agreed asset retention or transfer, of the temporary logistics base from the Port of Igoumenitsa. With the exception of the residual, negligible interactions associated with well-sealing operations, these activities are associated with the removal of the safety exclusion zone and the restoration of unrestricted access to the water column previously occupied by the MODU, as well as the release of port operational space back to routine port business.

As with the mobilisation phase, the Shipping and Navigation Assessment (Annex 07) does not extend its quantitative hazard analysis to the transit of the MODU and support vessels away from Asopus-1 back to port, this being managed through standard passage planning, COLREGs/SOLAS compliance and port control; the baseline traffic characterisation summarised in Section 10.1.9.2.2 nonetheless indicates ample sea room either side of the vessel's departure route, with the highest-density shipping corridor remaining well to the east of the well location. Removal of the safety exclusion zone will reinstate unrestricted navigation and

fishing access. Similarly, the release of quay space and port waters upon dismantling of the logistics base will allow the relevant areas to be handed back in the condition agreed with the Port operator.

In summary, with regard to their significance, the impacts on maritime uses during the demobilisation and abandonment phase associated with well-sealing operations are assessed as negative (–) but of negligible intensity (IN = 1), localised extent (EX = 1), immediate (MO = 4), temporary (PE = 1), short-term and fully reversible (RV = 1), non-synergistic (SI = 1), direct (EF = 4), discontinuous (PR = 1), with immediate recovery potential (MC = 1) and non-cumulative (AC = 1); overall, these residual impacts are assessed as **Minor**. By contrast, the removal of temporary subsea infrastructure and the dismantling and removal, subject to any agreed retention or transfer of assets, of the logistics base from the port area are assessed as positive (+), restoring baseline access and use of the marine environment and the operational availability of the port; these beneficial impacts are recorded as **Positive** in the final significance rating.

| Impacts on Maritime Uses                         |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|--------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                    | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| Cement plug installation and abandonment         | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               |
| MODU circulation and surface handling operations | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               |
| Removal of temporary subsea infrastructure       | +          | 2              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 25                    | Low        | High                       | POSITIVE            |
| Dismantling and removal from the port area       | +          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 4                | 2             | 1                 | 26                    | Low        | High                       | POSITIVE            |

### 10.1.9.3 Structure and Functions of the Anthropogenic Environment

The assessment of potential impacts on the structure and functions of the anthropogenic environment considers the potential for Project activities to affect the structure and principal characteristics of the anthropogenic environment, including the urban fabric and settlement structure adjacent to the Project. In particular, it considers whether Project activities could result in fragmentation of urban or peri-urban areas or contribute to direct or indirect trends of upgrading or degradation of the existing settlement structure and urban environment.

As established in the ESBS (Annex 02), the offshore Project area within Block 2 contains no permanent settlements, urban fabric or terrestrial land uses. The onshore components of the Project are confined to existing, operational facilities at the Port of Igoumenitsa and Corfu International Airport. The Project does not require land acquisition, permanent land take, resettlement, new permanent buildings, or expansion of existing infrastructure. The temporary logistics base at the Port of Igoumenitsa will operate within the existing port zone, while the temporary helicopter hangar at Corfu International Airport will be installed within the existing airport area. Accordingly, the Project does not alter the established settlement pattern or the functional structure of the surrounding urban areas.

During the drilling preparation and mobilisation phase, temporary activities at the Port of Igoumenitsa, including the installation of temporary fencing, signage, prefabricated office and welfare facilities, equipment

staging and logistics operations, will be undertaken within the existing operational port area. These activities may temporarily modify internal circulation and the use of operational space within the port but will not extend into adjacent settlements or result in fragmentation of the wider urban fabric. Similarly, the temporary helicopter hangar and associated helicopter operations at Corfu International Airport will remain within the existing airport operational area and will not alter the surrounding settlement structure or land use pattern.

During the exploration drilling operations phase, activities will be predominantly offshore. The drillship will operate within Block 2, while support vessel movements will take place within the established maritime environment. The temporary 500 m safety exclusion zone around the drillship may temporarily restrict access to a limited area of marine space for other users, but this does not affect the physical structure or functional organisation of adjacent settlements or urban areas. Onshore logistics activities at the Port of Igoumenitsa will continue to use existing operational areas and will not require permanent changes to the port or surrounding urban environment.

During demobilisation and abandonment, temporary facilities and equipment associated with the logistics base and helicopter support arrangements will be removed, retained or transferred as agreed with the relevant facility operator, and the operational areas will be handed back in the agreed condition.

Overall, the Project is not expected to result in fragmentation of the urban structure, alteration of settlement patterns, or degradation of the principal characteristics and functions of the anthropogenic environment. Any temporary changes in the internal use or circulation of existing port and airport operational areas are limited in extent and duration and do not affect the adjacent urban fabric or settlements. Conversely, the removal of temporary facilities following completion of the exploration programme will restore the existing functional arrangements.

The Structure and Functions of the Anthropogenic Environment Valued Receptor is therefore considered to be of **Low significance**. Given the absence of permanent construction, land take, resettlement, expansion of the existing infrastructure footprint, or interaction with the urban fabric and settlement structure the receptor is **scoped out** of further detailed impact assessment.

#### 10.1.9.4 Cultural Heritage

This section assesses the potential impacts of the Project on cultural heritage, drawing on the baseline conditions presented in ESBS (Annex 02), the Archaeological Baseline Assessment Report prepared by the GeoSat ReSeArch Lab of the Foundation for Research and Technology Hellas – Institute for Mediterranean Studies (FORTH-IMS) (Annex 06), and correspondence received from the Ephorate of Underwater Antiquities (EUA) in response to the Project's request for information on underwater cultural heritage within the Block 2 marine area (Ref. 138577, dated 27 April 2026).

Cultural heritage within the study area comprises two components: (i) terrestrial cultural heritage, encompassing the designated archaeological sites, historic settlements, fortifications and listed monuments of the Corfu and Thesprotia Regional Units (ESBS Section 2.6.3.1); and (ii) underwater cultural heritage, reflecting the recognised archaeological significance of the northern Ionian Sea as a maritime cultural landscape and, in particular, the identification of a target interpreted as a probable ancient shipwreck (Target T057) identified within the LOT 01 survey area (ESBS Sections 2.6.3.2 and 3.3.1.12).



The Cultural Heritage Valued Receptor has been assigned **High significance**. This reflects the recognised maritime archaeological importance of the Corfu–Otranto corridor within which Block 2 is situated and, most directly, the identification of Target T057 as the probable remains of an ancient merchant vessel with an associated amphora cargo. Although terrestrial heritage assets lie entirely outside the Project’s onshore and offshore footprint, the potential presence of an underwater cultural heritage asset within the wider survey area makes Cultural Heritage a highly sensitive receptor for which avoidance and protection measures are warranted.

### Terrestrial cultural heritage

As established in the ESBS, the Corfu Regional Unit and the Municipality of Igoumenitsa contain numerous designated cultural heritage assets, including the UNESCO World Heritage-inscribed Old Town of Corfu, the Fortress of Igoumenitsa, and a range of other listed monuments and archaeological sites. None of these designated assets is located within, or in the immediate vicinity of the Project’s onshore operational footprint. The onshore components of the Project are confined to existing, already-developed operational areas within the Port of Igoumenitsa (Port Zone B4.5) and Corfu International Airport, and involve no land acquisition, excavation or ground-disturbing works beyond any limited works required within existing operational surfaces. No direct or indirect interaction between Project activities and any designated terrestrial cultural heritage asset is anticipated during any Project phase.

Notwithstanding the absence of any known asset within the Project footprint, any ancillary ground-disturbing works undertaken onshore, if required, will be carried out in accordance with the requirements of Law 4858/2021, including prior consultation, where relevant, with the competent Ephorate of Antiquities of Corfu or the Ephorate of Antiquities of Thesprotia, and implementation of a Chance Finds Procedure in the event that previously unrecorded archaeological material is encountered. On this basis, terrestrial cultural heritage is not assessed further in the tables below.

### Underwater cultural heritage

The LOT 01 geophysical and visual inspection survey identified Target T057 at a water depth of 880.04 m (ESBS Table 3.12, Section 3.3.1.12- Annex 02), interpreted by FORTH-IMS as the remains of an ancient merchant vessel associated with a cargo of transport amphorae, with both exposed and buried archaeological deposits preserved on the seabed. The target comprises an isolated, elongated seabed anomaly measuring approximately 23.7 m by 8.3 m and rising approximately 0.6 m above the surrounding seabed, with sub-bottom profiler data indicating buried material extending a further 2.20 m below the seabed. Visual inspection using the CathX camera system confirmed a concentration of partially buried amphorae, of a form broadly consistent with Adriatic production-sphere types (Lamboglia 2 and Dressel 6A). Although the available evidence does not permit secure typological or chronological attribution, the observable characteristics are consistent with an ancient shipwreck of high archaeological significance.

The Archaeological Baseline Assessment Report identifies the potential mechanisms by which underwater cultural heritage could be affected by offshore project activities. Direct impacts could arise from seabed penetration associated with drilling or from the placement of temporary infrastructure on the seabed, potentially resulting in physical damage, displacement or destruction of archaeological deposits, should such remains occur within the affected area. Indirect impacts could arise from localised sediment disturbance, accidental contact with previously unidentified material, or unplanned activities outside the intended operational footprint.



In relation to the proposed Project, Target T057 is located approximately 8,606 m (8.6 km) north of the proposed Asopus-1 well location and therefore lies well outside the 500 m safety exclusion zone to be established around the MODU during drilling operations. Target T057 is also not expected to be affected by localised seabed deposition associated with WBM fluids/cuttings or cement discharge, which are typically confined to the immediate vicinity of the wellhead. No other archaeological sites, anomalies or geophysical signatures indicative of underwater cultural heritage were identified within the project footprint or within the 500 m assessment area surrounding the proposed drilling location. This finding is consistent with the response received from the EUA (Ref. 138577, dated 27 April 2026), which confirms that no information is currently available to the authority indicating the presence of underwater antiquities or declared underwater archaeological sites within the relevant marine area. The EUA nevertheless notes that ancient and modern shipwrecks have been identified during previous investigations in the wider marine area.

Accordingly, no direct physical interaction between planned Project activities and Target T057, or with any other known underwater cultural heritage asset, is anticipated during any Project phase. Nevertheless, the Archaeological Baseline Assessment Report notes that, while no archaeological targets were identified in the vicinity of the well location, the presence of deeply buried, currently unidentified archaeological material cannot be entirely excluded. This residual uncertainty is further recognised in the EUA correspondence, which has requested review of the detailed seabed survey results and, if considered necessary, an in-situ underwater archaeological inspection. Given this uncertainty, the **High significance** of the receptor, the archaeological potential of the wider Block 2 area, and the recognition that offshore areas of the northern Ionian Sea remain incompletely investigated archaeologically, potential underwater cultural heritage within the Project area will be addressed through appropriate avoidance and management measures, while Target T057 will remain outside the Project operational footprint. The specific measures proposed to avoid and manage potential effects on cultural heritage are set out in Chapter 11 (Mitigation Measures) of this ESIA.

#### 10.1.9.4.1 Drilling Preparation and Mobilisation Phase

Mobilisation-phase activities are confined to the existing operational areas of the Port of Igoumenitsa and Corfu International Airport, and to the transit of the MODU and support vessels to the Asopus-1 well site. None of these activities involves seabed disturbance, discharge, or any other interaction with the marine environment in the vicinity of Target T057 or any other known or suspected underwater cultural heritage feature, and no designated terrestrial cultural heritage asset is present within or adjacent to the onshore logistics footprint. Consistent with the Project scoping exercise, no interaction between mobilisation-phase activities and the Cultural Heritage receptor has been identified. No impact is therefore expected, and this phase is accordingly scoped out.

#### 10.1.9.4.2 Exploration Drilling Operations Phase

During the drilling operations phase, the principal potential pathways of interaction with the Cultural Heritage receptor relate to the establishment of the MODU safety exclusion zone and associated support/supply vessel transfers, the drilling, wellhead and casing installation itself, the discharge of WBM fluids/cuttings and cement to the seabed and contingency activities that may include re-spudding, sidetracking, temporary well suspension, emergency disconnect, lost-circulation response and contingent cementing. Given the 8.6 km separation between Target T057 and the well location, none of these activities is expected to result in a

direct physical interaction with the target; the interactions identified are therefore precautionary in nature, reflecting the general (rather than site-specific) archaeological potential of Block 2 and the theoretical possibility of previously unidentified submerged material occurring closer to the well footprint than currently known assets. Conversely, the routine deployment of the ROV for inspection of equipment and the seabed during this phase may provide an opportunity to identify previously unrecorded material within the immediate operational area.

In summary, the negative interactions during the drilling operations phase are assessed as being of negligible intensity (IN = 1), confined to the localised project footprint given the substantial separation from Target T057 (EX = 1), immediate in onset (MO = 4), temporary and coincident with the drilling period (PE = 1), short-term and fully reversible (RV = 1), non- to lowly synergistic (SI = 1), indirect in effect given the absence of any direct interaction with a known heritage asset (EF = 1), ranging from discontinuous to continuous depending on the activity (PR = 1–4), with immediate to short-term recovery potential (MC = 1), and non-cumulative (AC = 1). Given the **High significance** of the Cultural Heritage receptor, these negligible-magnitude impacts are elevated to a final significance of **Minor**. This is consistent with the independent evaluation in the Archaeological Baseline Assessment Report (Annex 06, Section 6.4), which likewise concludes that, given the separation distance between Target T057 and the well location and the absence of any archaeological target within the 500 m assessment area, the magnitude of impact on known underwater cultural heritage is negligible and the significance of effect is negligible to minor.

| Cultural Heritage                                                                                                                                                                                     |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                                                                                                                                                                         | Nature (S) | Intensity (IN) | Extent (Ex) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| MODU safety exclusion zone and support/supply vessel transfers                                                                                                                                        | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 4                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               |
| MODU drilling, wellhead and casing installation                                                                                                                                                       | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               |
| Discharge of WBM fluids/cuttings to seabed                                                                                                                                                            | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 17                    | Negligible | High                       | MINOR               |
| Cement discharges at seabed                                                                                                                                                                           | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               |
| ROV operation                                                                                                                                                                                         | +          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 22                    | Low        | High                       | POSITIVE            |
| Drilling contingency activities (including re-spudding, sidetracking, temporary well suspension, emergency disconnect, lost-circulation response, contingent cementing and mechanical pipe severance) | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               |

#### 10.1.9.4.3 Demobilisation and abandonment phase

During demobilisation, no interaction with known underwater cultural heritage is anticipated. Target T057 is located approximately 8.6 km from the well location, and no known cultural heritage asset has been identified within the operational footprint. No demobilisation-phase activity (cement plug installation and abandonment, MODU circulation and surface handling operations, removal of temporary subsea infrastructure, or dismantling of the onshore logistics base) has been identified as interacting with the Cultural Heritage receptor.

In summary, no impact on known underwater cultural heritage is expected during the demobilisation and abandonment phase. The post-operation ROV seabed survey around the wellhead is assessed as positive (+), of minor intensity (IN = 2), localised extent (EX = 1), immediate (MO = 4), temporary (PE = 1), short-term and fully reversible (RV = 1), non-synergistic (SI = 1), direct in effect (EF = 4), discontinuous / one-off in occurrence (PR = 1), with immediate to short-term recovery potential (MC = 1), and non-cumulative (AC = 1). In terms of overall significance, this impact is assessed as **Positive**.

| Cultural Heritage                                    |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |     |                            |                     |
|------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|-----|----------------------------|---------------------|
| Project Activities / Elements                        | Nature (S) | Intensity (IN) | Extent (Ex) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |     | Valued Receptor Assessment | Impact Significance |
|                                                      |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |     |                            |                     |
| ROV post-operation seabed survey around the wellhead | +          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 22                    | Low | High                       | POSITIVE            |

#### 10.1.10 Impacts on the socio-economic environment

##### 10.1.10.1 Economic Activities

This section presents the updated impact assessment for the Economic Activities VR, which has been assigned **High significance**, reflecting the Project's interaction with regional economic activities, particularly commercial fisheries, tourism, port services, logistics and local supply chains, and its potential to generate temporary employment and procurement opportunities.

Given the offshore, single-well and time-limited character of the Project, particular attention is given to marine-based economic activities, principally commercial fisheries, together with maritime tourism and aquaculture where relevant, and to the use of existing port, logistics and aviation services supporting the Project at the Port of Igoumenitsa and Corfu International Airport. Potential effects on terrestrial economic activities are also considered where they may arise through Project expenditure, procurement, employment or interaction with existing infrastructure.

##### Population and demographics

The Project is not expected to result in a material change in the population or demographic structure of the study area. The offshore location of the well and the temporary nature of the drilling campaign mean that the Project does not require land acquisition, permanent settlement, or displacement or relocation of residents in either the Corfu Regional Unit (permanent population 101,600; 2021 Census) or the

Municipality of Igoumenitsa (permanent population 25,698; 2021 Census). The use of existing port and airport facilities similarly does not require the establishment of a new permanent workforce settlement or supporting residential infrastructure.

A temporary presence of Project personnel and contractors will occur during mobilisation, drilling and demobilisation, associated primarily with the offshore drilling unit (approximately 160, with accommodation for up to 180 persons) and supporting marine and aviation logistics, rather than with a permanent increase in the resident population of the surrounding municipalities. The shore-based workforce at the Igoumenitsa logistics base is limited to approximately six personnel during routine operations. Any temporary demand generated for accommodation, food, transport and other services is therefore expected to be limited in duration and spatially concentrated around the existing logistics and service locations.

No material change in population distribution, seasonal population patterns or demographic characteristics is anticipated as a consequence of the Project. Potential indirect demographic effects associated with induced development are also not expected because the Project is a discrete exploration activity, does not establish permanent production infrastructure and does not, at this stage, provide a basis for a permanent expansion of the local economic or residential base.

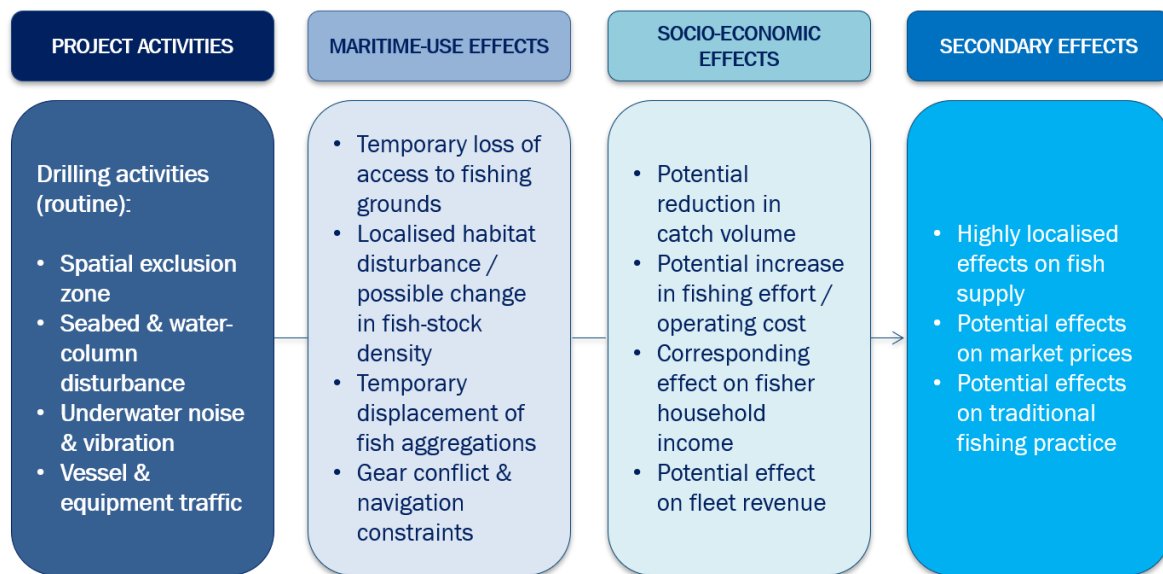
Accordingly, the Project is not expected to generate a material adverse or beneficial demographic effect.

#### Local economic structure

The local economy of the wider study area comprises a combination of tourism and associated services, fisheries, port and aviation-related transport and logistics, commerce and other service-sector activities. The two areas most closely associated with the Project differ markedly in economic structure: the Corfu Regional Unit is a service-based, tourism-dependent economy (trade, transport, accommodation and food services account for 47.4% of regional GVA, and tourism is estimated to contribute approximately 75% of regional GDP), whereas the Thesprotia Regional Unit and the Municipality of Igoumenitsa host a more diversified economy in which the Port of Igoumenitsa, handling approximately 3 million passengers, 750,000 private vehicles and 350,000 trucks annually, functions as a strategic national gateway to Italy and the Adriatic. The Project does not involve permanent land take or conversion of land from existing productive uses and therefore does not directly alter the structure or spatial distribution of established terrestrial economic activities in either area.

The principal potential interaction with the local economic structure arises from the offshore nature of the Project and its interaction with existing marine users, in particular **commercial fisheries**. As set out in ESBS Section 2.6.2.3 and 2.7.4, the Asopus-1 well lies within GSA 19 (Western Ionian Sea), and although fishing intensity at the well location is lower than in coastal waters, the wider area is traversed by Greek and Italian commercial fishing vessels. The economic significance of fisheries to the two onshore study areas is modest in aggregate terms (agriculture, forestry and fishing together account for only 4.3% of Ionian Islands and 3.9% of Epirus regional GVA) but locally important for a limited number of fishing households: the most recent (2018) indicative estimate for the Corfu Regional Unit records approximately 520 registered fishing vessels and an estimated 1,560 persons engaged in the sector (boat owners and workers combined), while the “Coasts of Epirus and Kerkyra Island” fishing area recorded 807.1 tonnes of catch in 2024 (1.5% of the national total), a figure that has declined by 16.6% since 2023 and 20.2% since the 2019 peak for reasons unrelated to the Project. Notably, neither Corfu nor Igoumenitsa hosts an official fish landing market, so the economic value of locally landed catch cannot be independently verified from published statistics.

In assessing the potential interaction between the Project and commercial fisheries, the following impact pathway has been considered:



This full pathway represents the theoretical range of transmission mechanisms by which offshore hydrocarbon exploration can, in principle, generate socio-economic harm to fishing-dependent communities. Applying the Project-specific baseline evidence, however, indicates that realised effects are expected to sit toward the least severe end of this pathway. The Project comprises a single exploratory well with a conservatively assessed maximum duration of 90 days; the 500 m safety exclusion zone is small relative to the wider western Ionian fishing grounds; the Central Port Authority of Corfu has confirmed that no designated anchorage areas or permanent/seasonal fishing zones exist at the Asopus-1 location; and the pre-existing GFCM deep-water Fisheries Restricted Area already excludes bottom-contact trawling gear from the portions of Block 2 exceeding 1,000 m water depth, independently of the Project. On this basis, the pathway is not expected to progress beyond temporary, spatially confined and reversible effects on individual vessels operating in the immediate vicinity of the MODU during the drilling period, rather than a structural threat to the viability of the local fishing sector.

As set out in Section 10.1.5.2.3, while Project activities may result in temporary and localised disturbance or behavioural responses in fish, the assessment concludes that these effects are reversible and do not result in significant or long-term effects on the integrity or abundance of fish populations. Following implementation of the relevant mitigation measures, all residual impacts on fish fauna are assessed as Minor. Accordingly, the Project is not expected to cause a material reduction in fish stocks or sustained displacement of commercially exploited fish species, and any resulting secondary effect on commercial fishing activity is expected to be negligible.

Aquaculture is not expected to interact materially with the Project given its spatial concentration in coastal waters, well inshore of Block 2 (see Section 10.1.9.2).

With regard to tourism, the Corfu Regional Unit and, to a lesser extent, the Thesprotia Regional Unit constitute economically important tourism destinations within the wider study area, with, as mentioned above, tourism contributing an estimated 75% of regional GDP in the Ionian Islands Region and a smaller but growing share in Epirus (ESBS Section 2.7.5). Given that all Project infrastructure will be located or operated from locations already in established commercial or industrial use, namely the existing Port of Igoumenitsa, Corfu

International Airport, and the offshore drilling location approximately 44 km from the nearest shoreline and beyond the visual horizon of the mainland coastline, the Project is not expected to alter the physical or visual landscape upon which the region's tourism offer partly depends.

The temporary 500 m safety exclusion zone to be established around the MODU is confined to a small area of open sea situated well outside the principal recreational navigation, yachting, diving and cruise corridors identified in the maritime tourism baseline, which are concentrated in coastal and inter-island waters around Corfu, Paxos, Antipaxos, the Diapontian Islands and the Thesprotia coast. Consequently, the exclusion zone and associated support-vessel movements are not expected to restrict existing tourism-related maritime activities, and no designated bathing water, marina, dive site or tourist anchorage lies within or adjacent to the Project's offshore footprint.

As set out in Section 10.1.8.1 on seawater quality assessment, potential effects on marine water quality arising from the Project are assessed as localised, temporary and rapidly attenuating through dilution, dispersion and settling, with no measurable degradation of coastal seawater quality anticipated; overall residual impacts are assessed as Minor. No material secondary effect on the attractiveness of coastal bathing waters or reduced tourism income is therefore anticipated.

Onshore, mobilisation, drilling-support and demobilisation activities at the Port of Igoumenitsa and Corfu International Airport have the potential to generate localised noise and air emissions; however, as concluded in the air quality and noise assessments, these effects are expected to be limited in duration, confined to the immediate operational footprint of the existing port and airport, and, overall, minor and are therefore not expected to result in a discernible adverse secondary impacts on the tourism sector.

Overall, the Project is expected to generate a temporary positive stimulus to local economic activity through expenditure on logistics, marine services, port services, accommodation, catering, transport and other goods and services, concentrated principally around the Port of Igoumenitsa and, to a lesser extent, Corfu International Airport. Overall, the Project is not expected to materially alter the structure or relative importance of the established economic sectors of the study area; its principal economic effects comprise temporary interactions with marine-based activities (essentially fisheries), together with short-term expenditure and procurement benefits.

## Employment

The Project will generate employment during mobilisation, drilling and demobilisation, comprising direct employment associated with the offshore drilling campaign and supporting marine, aviation and onshore logistics activities, together with indirect employment through procurement of goods and services. The largest single workforce component is the MODU crew (approximately 160 persons typically, up to 180 accommodated), followed by support/supply vessel crews and specialist offshore contractors (drilling, cementing, well control, mud systems, ROV, marine logistics and aviation services, several of which are expected to be provided by third-party contractors). Onshore, the Igoumenitsa Supply Base is expected to employ approximately six personnel during routine operations, and helicopter operations between Corfu International Airport and the MODU are expected to generate approximately 50–60 personnel transfers per week, supporting demand for aviation and related contractor services.

At the time of the assessment, no local-hire target or percentage is specified for the 160–180-person offshore workforce, no breakdown of direct versus indirect employment is available, and the specialist nature of most offshore positions means that the availability of the relevant skills within the local labour force of



Corfu and Thesprotia has not been established. The clearest quantified local employment component remains the approximately six-person Igoumenitsa shore-based workforce, together with the more diffuse but plausible generation of local/regional employment through contracted logistics, cargo-handling, waste-management, aviation-support and other services. Given the temporary, single-well nature of the Project, employment effects are expected to be short-term rather than associated with the creation of a permanent local employment base and induced economic activity from personnel expenditure is expected to be secondary and proportionate to the limited duration and scale of the campaign.

Potential negative employment effects could principally relate to the possibility of temporary reduction in fishing effort where fishing vessels are required to avoid the Project's operational area or associated support-vessel routes; consistent with the discussion above, any such effect is expected to be temporary, localised and readily reversible upon completion of drilling, with no permanent loss of employment anticipated in the fisheries sector or other established economic sectors. Overall, the employment effect of the Project is expected to be minor positive, with a limited potential for temporary negative effects where marine economic activities (particularly fisheries) spatially and temporally overlap with the Project's operational area.

### Regional and national economy

The Project represents a temporary investment in offshore exploration and associated marine, logistics and support services within a national economy that has continued its post-pandemic recovery, with real GDP growth of 2.1% in both 2024 and 2025 and unemployment falling to 8.4% by the final quarter of 2025, its lowest level in approximately sixteen years. At the regional level, the Epirus Region and the Ionian Islands Region contributed approximately 2.0% and 1.7% of national GDP respectively in 2023 (Corfu Regional Unit 0.8%; Thesprotia Regional Unit 0.3%), so that, while the Project's expenditure is not expected to be material at the national scale, it may generate a proportionately more visible, temporary contribution to the local and regional economies through the use of existing infrastructure and services, including the Port of Igoumenitsa and Corfu International Airport, and associated marine, logistics, transport and service-sector businesses.

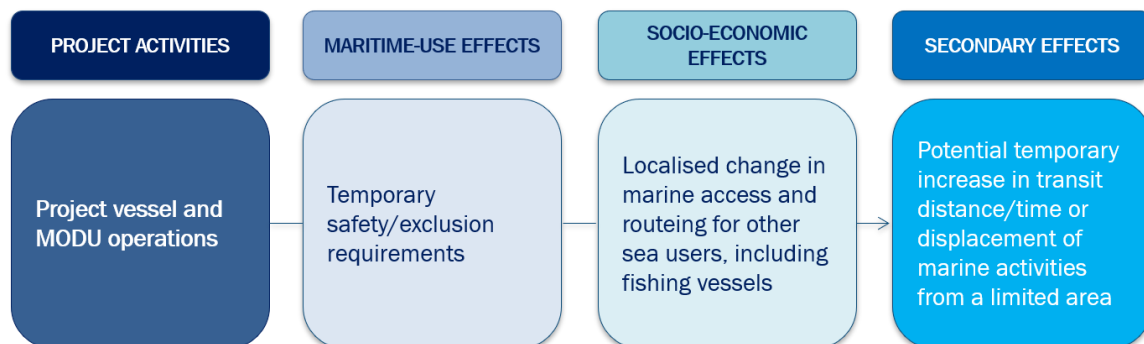
Because the use of existing infrastructure avoids the need for new construction, these economic benefits can be generated without the additional environmental and economic disturbance associated with development of new supporting facilities. At the national level, the Project contributes to economic activity through expenditure on specialised offshore drilling and support services and represents an investment in the exploration of Greece's offshore hydrocarbon resources; however, as an exploration campaign rather than a production development, it does not generate production revenues or the wider, long-term economic effects associated with a producing field. Any future appraisal or development activity following a successful exploration result would be subject to a separate permitting process and environmental assessment and therefore falls outside the scope of this assessment. The regional and national economic effects of the Project are accordingly expected to be positive but temporary, with their magnitude dependent on the proportion of Project expenditure and procurement retained within the Greek economy.

### Quality of life, land value and connectivity

The Project is not expected to materially affect the availability of services and facilities to the resident population of either study area. No permanent land take, residential displacement or new settlement is required, and no material pressure on housing, education, healthcare or other community services is anticipated. No material effect on land or property values is expected, given the offshore location of the well, the absence of permanent structures or land-use change, and the temporary nature of the drilling campaign.



The principal potential connectivity effect relates to temporary interactions between the Project and marine navigation and access, as follows:



These effects are expected to be temporary and localised, are addressed in detail under the Maritime Uses receptor and are not expected to result in permanent severance of established transport or economic links. Road and port movements associated with the Project may temporarily increase during mobilisation and drilling logistics, but the Project does not require new transport infrastructure or permanent changes to terrestrial connectivity. Overall, no material adverse effect on quality of life, land/property values or wider connectivity is anticipated.

#### Compatibility with other development policies and projects

The Project is a temporary offshore exploration activity that does not introduce permanent changes in land use or establish a new long-term economic activity. As set out in the compatibility assessment presented in Chapter 5 and summarised in Section 10.1.9.1 of this Chapter, the Regional Spatial Framework for Epirus (MD ΥΠΕΝ/ΔΧΩΠΣ/78523/1208, GG 286/ΑΑΠ/28-11-2018) explicitly identifies “support activities related to hydrocarbon exploration and production in the Northern Ionian and Epirus regions” among the priority functions for future diversification of the Port of Igoumenitsa, while the Regional Spatial Framework for the Ionian Islands identifies offshore hydrocarbon exploration as an activity of national economic significance, subject to environmental safeguards. The Project's use of existing port and aviation infrastructure is therefore broadly compatible with, and in the case of Igoumenitsa positively anticipated by, the strategic economic development framework applicable to the study area.

Potential interactions with other marine economic activities, including commercial fisheries, maritime transport, aquaculture and tourism, are primarily spatial and temporal in nature rather than structural, and are considered further in the cumulative and synergistic assessment where relevant. The Project does not, in itself, establish a new permanent development trajectory that would be expected to conflict with the established economic structure or development direction of the study area.

#### Overall assessment

The Project is expected to have a limited and predominantly temporary influence on economic activities within the study area. The main potential adverse pathway is associated with temporary interaction between offshore drilling/support-vessel operations and existing marine economic activities, particularly commercial fisheries, through the 500 m safety exclusion zone and associated vessel movements. Consistent with the impact pathway discussed above, this effect is expected to be localised, short-term and reversible, and does not represent a permanent loss of productive resources or a structural change in the local economy or the viability of the fishing sector.

In parallel, the Project is expected to generate temporary positive economic and employment effects through direct and indirect employment, procurement and expenditure on marine, port, aviation, transport and other support services, extending from the immediate Project area (Igoumenitsa and, to a lesser extent, Corfu) to the regional and, to a limited degree, national economy, depending on the proportion of expenditure retained within Greece. No material effects on population or demographic characteristics, permanent employment, land or property values, essential services, or long-term connectivity are anticipated, and no material incompatibility with existing development trends or strategic spatial planning objectives has been identified.

#### 10.1.10.1.1 Drilling preparation and mobilisation phase

During the mobilisation phase, interactions with the Economic Activities receptor arise principally from the recruitment and engagement of the offshore, marine and shore-based workforce, the procurement of goods and services required for the drilling campaign, the temporary occupation of quay space and staging areas within the Port of Igoumenitsa (including mobilisation and, if applicable, installation of a wharf crane), and the transit of the support vessels from their point of mobilisation to the Asopus-1 well site.

The mobilisation of the MODU and support vessels may result in temporary behavioural changes of fish in the vicinity of the vessel routes. However, these effects are spatially limited and short-term, and the associated marine fish-fauna assessment concludes that the impacts on fish fauna during the mobilisation phase are localised, reversible and of Minor significance. The mobilisation activities therefore do not result in a material reduction in the availability of fishing grounds or fish resources, and any potential secondary effect on commercial fishing activity is expected to be negligible.

The positive interactions associated with employment, procurement and expenditure on marine, port, transport and other services are expected to provide a temporary economic stimulus to the local and regional economy, principally through activities associated with the Port of Igoumenitsa.

In summary, with regard to their significance, the positive employment and procurement effects of mobilisation are assessed as of low to minor intensity (IN = 1 - 2), affecting a local to regional area (EX = 2 - 4), immediate in onset (MO = 4), coincident with the mobilisation period (PE = 1), short-term and fully reversible on completion of the phase (RV = 1), with low to moderate synergy with concurrent port and contracting activity (SI = 1-2), largely direct in effect (EF = 1-4), discontinuous to periodic (PR = 1-2), with short-term recovery/reversion (MC = 1), and non-cumulative (AC = 1); these effects are recorded as Positive. The negative interactions associated with temporary occupation of port operational space and the offshore transit of the MODU are of negligible to low intensity (IN = 1), localised extent (EX = 1), immediate onset (MO = 4), temporary duration (PE = 1), short-term and fully reversible (RV = 1), low synergy (SI = 1), indirect effect (EF = 1), discontinuous occurrence (PR = 1), with immediate to short-term recovery (MC = 1), and non-cumulative (AC = 1). Given the High significance of the Economic Activities receptor, these negligible magnitude negative interactions are elevated to a final impact significance of Minor. Overall, impacts during the mobilisation phase are assessed as ranging from **Minor** (negative, port- and transit-related) to **Positive** (employment, procurement and local contracting).

| Economic activities                                  |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                        | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| Mobilisation (recruitment, employment, labour force) | +          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 25                    | Low        | High                       | POSITIVE            |
| Supply chain and procurement                         | +          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 2                | 1             | 1                 | 26                    | Low        | High                       | POSITIVE            |
| Mobilise wharf crane to designated crane area        | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               |
| Install wharf crane (if applicable)                  | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               |
| Onshore loading/unloading or staging                 | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               |
| Install temporary helicopter hangar at Corfu         | +          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 1                | 1             | 1                 | 17                    | Negligible | High                       | POSITIVE            |
| Mobilisation of MODU to well site                    | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 18                    | Negligible | High                       | MINOR               |

### 10.1.10.1.2 Exploration Drilling Operations Phase

During the drilling operations phase, the principal potential interaction with economic activities arises from the temporary establishment of the 500 m safety exclusion zone around the MODU and associated support and supply vessel movements between the Port of Igoumenitsa and the well site. These activities may require fishing vessels to maintain separation from the immediate operational area and may result in temporary localised adjustment of fishing activity where actual spatial and temporal overlap occurs. The effect is expected to be limited to the immediate vicinity of the MODU and associated vessel movements and does not represent a material reduction in the wider fishing grounds available to commercial fleets.

As set out in Section 10.1.9.2 and consistent with the ESBS baseline (Annex 02), the Asopus-1 well lies within GSA 19 (Western Ionian Sea), where the wider seascape is traversed by Greek and Italian commercial fishing vessels, although fishing intensity at the well location is lower than in coastal waters. The economic contribution of fisheries to the wider regional economies is relatively limited in aggregate terms, while remaining locally important to individual fishing households. The GFCM deep-water Fisheries Restricted Area (>1,000 m) already excludes bottom-contact fishing gear from the deeper portions of Block 2 independently of the Project, and the Central Port Authority of Corfu has confirmed that no designated anchorage areas or permanent or seasonal fishing zones are present at the Asopus-1 location.

The Project therefore does not result in the permanent loss or fragmentation of fishing grounds or a structural change to the fisheries sector. The temporary 500 m exclusion area is small in relation to the wider fishing grounds, and any effect on individual fishing activity will depend on the extent to which vessels would otherwise have operated within the immediate Project area during the drilling campaign. Consequently, the potential economic effect is expected to be limited principally to temporary localised displacement or adjustment of individual fishing activity, with access to the area restored following completion of drilling and departure of the MODU.

Other drilling-related activities, including drilling, wellhead and casing installation, VSP activities and the various controlled discharges associated with drilling operations, are not expected to result in material direct effects on economic activities. Any potential interaction with fisheries would arise indirectly through temporary and localised changes in fish behaviour, availability or environmental conditions, rather than through loss of fishing grounds or direct restriction of access. As set out in Sections 10.1.5.2.3 and 10.1.8.1, the residual effects on marine fish fauna and seawater quality are assessed as Minor and are not expected to result in significant or long-term effects on fish populations, fish-stock condition or the wider marine environment. Accordingly, no more than negligible secondary effects on commercial fishing through changes in fish-stock availability or sustained displacement of commercially exploited species are anticipated.

In parallel, the continued operation of the Igoumenitsa logistics base, the deployment of helicopter services between Corfu International Airport and the MODU, and sustained Project expenditure on marine, port, aviation, catering, transport and waste-management services throughout the drilling campaign are expected to generate a positive, if temporary, economic stimulus to the local and regional economy, concentrated principally around Igoumenitsa.

In summary, with regard to their significance, the principal adverse interaction with economic activities during the drilling operations phase is the temporary and localised displacement or adjustment of commercial fishing activity associated with the MODU safety exclusion zone and support-vessel movements. It is assessed as of low intensity (IN = 1), local extent (EX = 2), immediate onset (MO = 4), temporary and coincident with the drilling campaign (PE = 1), short-term and fully reversible on cessation of drilling (RV = 1), with limited interaction with concurrent marine uses (SI = 1), and predominantly secondary in economic effect (EF = 1). The effect is periodic rather than continuously realised for individual fishing operators, reflecting that an economic effect would arise only where fishing activity overlaps spatially and temporally with the Project operational area (PR = 2). Recovery is expected to be short-term (MC = 1), and the effect is non-cumulative (AC = 1), yielding a negligible magnitude that, given the High significance of the receptor, is elevated to Minor in the final impact significance.

Discharge- and drilling-related effects are indirect secondary effects on fishing activity and are assessed as of negligible magnitude and Minor significance.

The positive interactions associated with logistics base operation, aviation services, employment, procurement and continued Project expenditure remain temporary positive effects.

Overall, impacts on Economic Activities during the drilling operations phase are therefore assessed as predominantly **Minor** for the adverse interactions, with **Positive** effects arising from Project employment, procurement and expenditure. The assessment does not identify a material reduction in fishing grounds, fish-stock availability or sustained displacement of commercially exploited species, and no material adverse effect on the long-term viability of commercial fisheries or the wider economic structure of the study area is anticipated.

| Economic activities            |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|--------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements  | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| MODU safety exclusion zone and | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               |

| Economic activities                                                                                                                                                                                   |   |   |   |   |   |   |   |   |   |   |   |    |            |      |          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|---|---|---|---|---|---|----|------------|------|----------|
| support/supply vessel transfers                                                                                                                                                                       |   |   |   |   |   |   |   |   |   |   |   |    |            |      |          |
| MODU drilling, wellhead and casing installation                                                                                                                                                       | - | 1 | 2 | 4 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 19 | Negligible | High | MINOR    |
| Discharge of WBM fluids/cuttings to seabed                                                                                                                                                            | - | 1 | 2 | 4 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 19 | Negligible | High | MINOR    |
| Discharge of WBM fluids/cuttings near sea surface                                                                                                                                                     | - | 1 | 2 | 4 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 19 | Negligible | High | MINOR    |
| Cement discharges at seabed                                                                                                                                                                           | - | 1 | 2 | 4 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 19 | Negligible | High | MINOR    |
| Cement discharges near sea surface (tank wash out)                                                                                                                                                    | - | 1 | 2 | 4 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 19 | Negligible | High | MINOR    |
| Pipe dope use during drilling                                                                                                                                                                         | - | 1 | 2 | 4 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 19 | Negligible | High | MINOR    |
| Testing of MODU blowout preventer                                                                                                                                                                     | - | 1 | 2 | 4 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 19 | Negligible | High | MINOR    |
| Discharge of sanitary waste (MODU/vessels)                                                                                                                                                            | - | 1 | 2 | 4 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 19 | Negligible | High | MINOR    |
| Discharge of food waste (MODU/vessels)                                                                                                                                                                | - | 1 | 2 | 4 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 19 | Negligible | High | MINOR    |
| Desalination unit discharges from MODU                                                                                                                                                                | - | 1 | 2 | 4 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 19 | Negligible | High | MINOR    |
| Discharge of drainage water (deck/fire/bilge/slop)                                                                                                                                                    | - | 1 | 2 | 4 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 19 | Negligible | High | MINOR    |
| Uplift and discharge of cooling water from MODU                                                                                                                                                       | - | 1 | 2 | 4 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 19 | Negligible | High | MINOR    |
| Discharge of ballast (MODU/vessels)                                                                                                                                                                   | - | 1 | 2 | 4 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 19 | Negligible | High | MINOR    |
| MODU and support/supply vessel power generation                                                                                                                                                       | - | 1 | 2 | 4 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 19 | Negligible | High | MINOR    |
| Vertical seismic profile (VSP) activities                                                                                                                                                             | - | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 17 | Negligible | High | MINOR    |
| Support activities (movement of support vessels)                                                                                                                                                      | - | 1 | 2 | 4 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 19 | Negligible | High | MINOR    |
| Drilling contingency activities (including re-spudding, sidetracking, temporary well suspension, emergency disconnect, lost-circulation response, contingent cementing and mechanical pipe severance) | - | 1 | 2 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 18 | Negligible | High | MINOR    |
| Operation of facilities, equipment and vehicles                                                                                                                                                       | + | 2 | 2 | 4 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 22 | Low        | High | POSITIVE |
| Logistics base operation – disruption to port activities                                                                                                                                              | - | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 17 | Negligible | High | MINOR    |
| Helicopter transfers between heliport and MODU                                                                                                                                                        | + | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 17 | Negligible | High | POSITIVE |

### 10.1.10.1.3 Demobilisation and abandonment phase

Demobilisation activities involve the removal of the 500 m safety exclusion zone and any temporary subsea infrastructure, the removal, retention or transfer, as agreed with the relevant facility operator, of the temporary logistics base from the Port of Igoumenitsa, and the removal, retention or transfer, as agreed with the relevant facility operator, of the temporary helicopter hangar from Corfu International Airport. With the exception of the residual, negligible interaction associated with waste contractor collections during decommissioning of the shore base, these activities are uniformly associated with the restoration of unrestricted marine access (including for commercial fishing) and the release of port and airport operational space back to routine business.

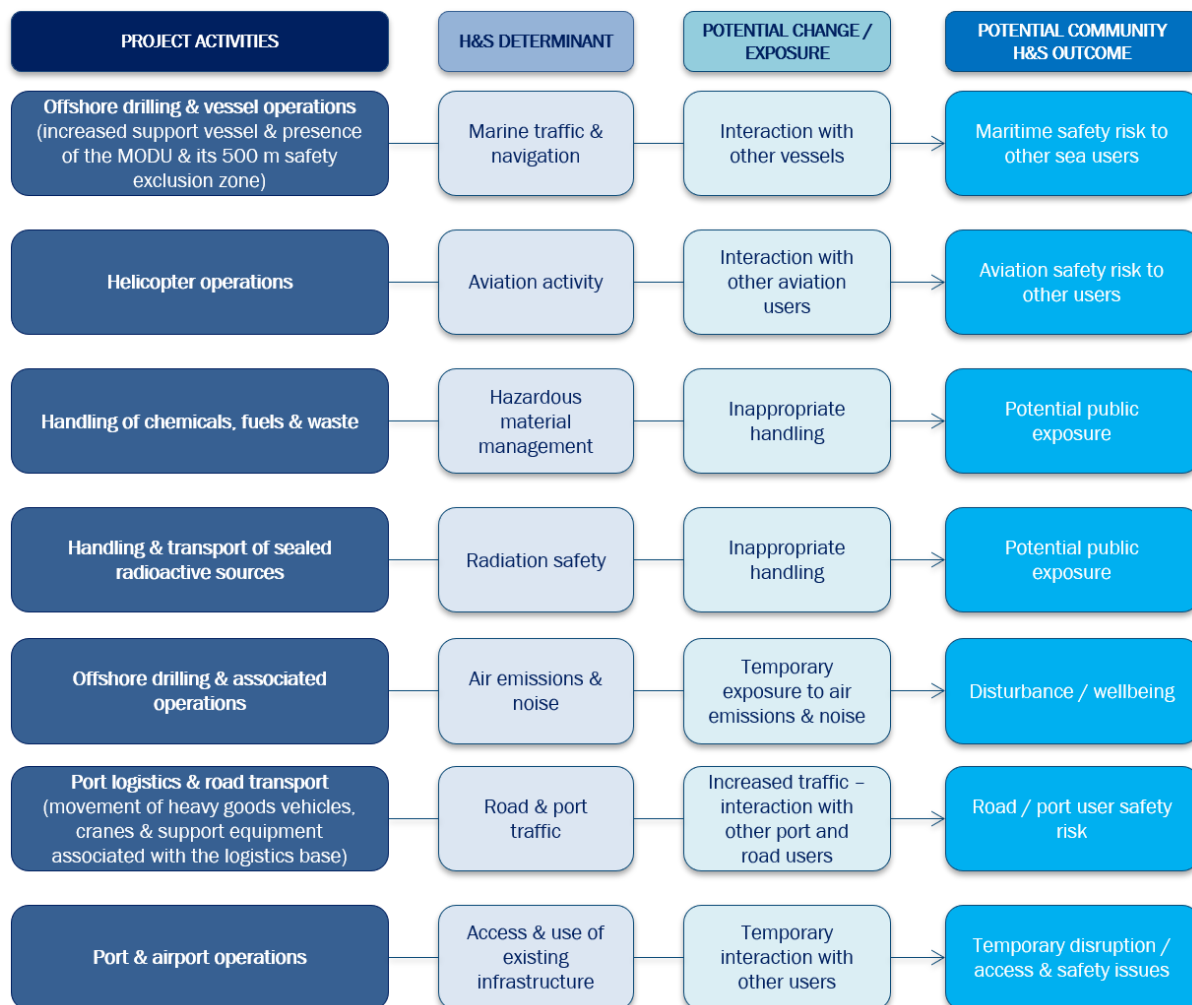
In summary, with regard to their significance, the removal of the exclusion zone and temporary facilities is assessed as positive (+), of minor intensity (IN = 1), localised extent (EX = 1), immediate in onset (MO = 4), temporary in duration (PE = 1), short-term and fully reversible (RV = 1), non- synergistic (SI = 1), indirect in effect (EF = 1), discontinuous (PR = 1), with short-term recovery/restoration potential (MC = 2), and non-cumulative (AC = 1); these effects are recorded as Positive. The residual negative interaction associated with waste contractor collections is of negligible magnitude and Minor significance. Overall, the demobilisation and abandonment phase is assessed as predominantly **Positive** for the Economic Activities receptor, reflecting the restoration of full, unrestricted use of the marine area, the port and the airport to their pre-Project condition.

| Economic activities                        |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|--------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements              | Nature (S) | Intensity (IN) | Extent (Ex) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| Dismantling and removal from the port area | +          | 2              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 2             | 1                 | 20                    | Negligible | High                       | POSITIVE            |
| Waste contractor collections (all wastes)  | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               |
| Removal of helicopter hangar               | +          | 2              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 2             | 1                 | 20                    | Negligible | High                       | POSITIVE            |

### 10.1.10.2 Community Health and Safety (H&S)

Community H&S is not a criterion of MD oik. 170225/2014 Annex 2; it is included as a supplementary receptor, consistent with international good industry practice, alongside socio-economic criteria. The assessment is limited to effects on third parties external to the Project workforce (other maritime users, aviation users, road users near the Port of Igoumenitsa and Corfu International Airport, and the wider public). Occupational H&S of the Project's own workforce is managed through Energean's and its contractors' OHS Management Systems and is not assessed here.

In assessing the potential interaction between the Project and with H&S of third parties and nearby communities the following impact pathways have been considered:



As set out in Table 10-1, Community H&S has been assigned **High significance** as a Valued Receptor, reflecting the importance of protecting third parties rather than an expectation of significant adverse effects. Major-accident consequences are addressed separately in Section 10.2 and are not duplicated here; detailed air quality, noise, waste and transport assessments are in Sections 10.1.6, 10.1.7.1, 10.1.10.4 and the Waste Management Plan (Annex 04), Chemical Use Plan (Annex 05), Shipping and Navigation Assessment (Annex 07) and Onshore Traffic Management Plan (Annex 08).

#### 10.1.10.2.1 Drilling preparation and mobilisation phase

During drilling preparation and mobilisation, interactions with Community H&S arise principally from temporary increases in vehicle, lifting and cargo-handling activity at the Port of Igoumenitsa, establishment of temporary facilities, installation of the temporary helicopter hangar at Corfu International Airport, and mobilisation of the MODU and support vessels. These activities take place within existing operational port, airport and marine environments and are subject to established site, port, airport and maritime safety procedures, together with the Onshore Traffic Management Plan (Annex 08) and the navigational controls described in Section 10.1.9.1.2.

The resulting interaction with third parties is expected to be limited and localised. Temporary increases in traffic and lifting activity may require routine coordination with other port and airport users, but do not require permanent changes to access arrangements or the introduction of new public infrastructure. Signage and



directional markings provide a minor beneficial interaction by improving traffic segregation and site safety. Overall, the mobilisation activities are expected to result in predominantly negligible to low-magnitude, temporary and reversible effects on Community H&S, with the principal potential interaction associated with the temporary presence and movement of the MODU and support vessels.

In summary, with regard to their significance, the impacts on Community H&S during the mobilisation phase are assessed as predominantly negative (-), of negligible intensity (IN = 1), localised in spatial extent (EX = 1-2), occurring immediately upon commencement of the relevant activity (MO = 4), coincident with the mobilisation period (PE = 1), short-term and fully reversible (RV = 1), with low synergistic interaction with concurrent port, airport and vessel-traffic activities (SI = 1 - 2), direct in effect (EF = 4), discontinuous in occurrence (PR = 1), with immediate to short-term recovery potential (MC = 1), and non-cumulative (AC = 1). Given the High significance of the Community H&S receptor, these negligible magnitude impacts are elevated to a final significance of **Minor**. The installation of signage and directional markings is assessed as a beneficial interaction and recorded as Positive.

| Community H&S                                                         |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|-----------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                                         | Nature (S) | Intensity (IN) | Extent (Ex) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| Install temporary fencing around entire base perimeter                | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               |
| Install signage and directional markings                              | +          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | POSITIVE            |
| Mobilise wharf crane to designated crane area                         | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               |
| Install wharf crane (if applicable)                                   | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               |
| Install utility connections                                           | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               |
| Install prefabricated office units, welfare and sanitation facilities | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               |
| Onshore loading/unloading or staging                                  | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               |
| Install temporary helicopter hangar at Corfu                          | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               |
| Mobilisation of MODU to well site – power generation                  | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               |

#### 10.1.10.2.2 Exploration Drilling Operations Phase

During the drilling operations phase, Community H&S interactions principally concern continuous support/supply vessel movements and the temporary 500 m safety exclusion zone, helicopter transfers between Corfu International Airport and the MODU, chemical handling in accordance with the Chemical Use Plan (Annex 05), high-pressure testing of the MODU blowout preventer, the use and storage of sealed radioactive sources for LWD/wireline logging, ongoing chemicals and waste management at the onshore

logistics base, and the continued operation of onshore facilities, equipment and vehicles at the Port of Igoumenitsa.

The principal direct Community H&S pathway is associated with the temporary interaction of Project vessels and the safety exclusion zone with other marine users. This interaction is managed through the embedded maritime safety controls described in Section 10.1.9.1.2 and Annex 09, including RAM status, 24/7 watchkeeping, AIS/ARPA monitoring, appropriate navigation lights and shapes, the 500 m safety zone, NAVTEX and Notices to Mariners. The independent Formal Safety Assessment concludes that the residual shipping and navigation risk is Broadly Acceptable (ALARP). The temporary nature of the Project, the defined operational area and the established communication and navigational controls limit the potential for adverse effects on third-party safety.

Other offshore activities have substantially more limited Community H&S pathways. Handling of pipe dope and well-control chemicals, together with testing of the MODU blowout preventer, is subject to established operational and occupational H&S controls. Given the offshore location of the MODU and the absence of public access to the facility, these activities do not create a material community exposure pathway and are therefore assessed as Minor.

The use and storage of sealed radioactive sources for LWD/wireline logging, together with their onshore storage and transport, is subject to EEAE licensing and the applicable Radiation Safety Manual controls. The sources are fully encapsulated and are not released to the environment. They are sealed and managed in accordance with applicable EEAE licensing requirements and radiation-safety procedures. In the absence of public access to the MODU and with controlled onshore handling and transport, the potential for third-party exposure is negligible. These activities are therefore assessed as Minor rather than as a material community-level H&S impact.

Onshore, logistics-base chemical and waste management, presents a temporary interaction with port workers and other port users. These activities are managed through the Chemical Use Plan (Annex 05), Waste Management Plan (Annex 04) and applicable port procedures. The interaction is expected to remain localised and low intensity, with no material change to the established function or safety arrangements of the Port of Igoumenitsa.

Operation of facilities, equipment and vehicles at the logistics base represents a mixed interaction. Routine vehicle and equipment movements introduce a limited additional interaction with other port users, while implementation of the Onshore Traffic Management Plan (Annex 10), trained personnel and coordination with the Port Authority provide a beneficial safety-management function. The overall interaction is therefore retained as Positive.

Drilling contingency activities are non-routine and require enhanced safety controls. Their potential Community H&S interaction is nevertheless limited by the offshore location of the MODU, the absence of public access to the operational area and the application of dedicated emergency and well-control procedures. They are therefore assessed as Minor.

Helicopter transfers between the heliport and the MODU are expected to result in only a negligible interaction with third parties, given established aviation safety procedures, defined flight arrangements and the limited frequency of movements. These remain Minor.

Routine offshore air emissions and noise are not expected to result in material exposure of nearby communities because of the offshore location of the MODU and the distance from the nearest shoreline. These aspects are assessed separately in Sections 10.1.6 and 10.1.7.1.

In summary, with regard to their significance, the impacts on Community H&S during the drilling operations phase are predominantly negative, of negligible to low intensity (IN = 1–2), localised to the immediate operational footprint or the vessel/helicopter transit corridors (EX = 1), immediate in onset (MO = 4), temporary and coincident with the drilling campaign (PE = 1), short-term and fully reversible (RV = 1), with low to moderate synergistic interaction with concurrent port, maritime and aviation activity (SI = 1–2), predominantly limited or indirect in effect for community receptors (EF = 1), discontinuous given the potential for third-party exposure / interaction (PR = 1), with short-term recovery potential (MC = 1), and non-cumulative (AC = 1).

Given the High significance of the Community H&S receptor, the resulting impacts are **Minor** because their potential community-level exposure is limited, controlled and localised. The routine operation of onshore facilities, equipment and vehicles remains recorded as **Positive** where the safety-management and traffic-coordination measures provide a beneficial interaction with community safety.

| Community H&S                                                                                                                 |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|-------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                                                                                                 | Nature (S) | Intensity (IN) | Extent (Ex) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| MODU safety exclusion zone and support/supply vessel transfers                                                                | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 1           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               |
| Pipe dope use during drilling                                                                                                 | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               |
| Testing of MODU blowout preventer                                                                                             | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               |
| MODU and support/supply vessel power generation                                                                               | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 18                    | Negligible | High                       | MINOR               |
| Vertical seismic profile (VSP) activities                                                                                     | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               |
| Support activities (movement of support vessels)                                                                              | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 18                    | Negligible | High                       | MINOR               |
| Lighting from MODU                                                                                                            | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               |
| Chemical use and storage                                                                                                      | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               |
| Radioactive source use and storage (well logging)                                                                             | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               |
| Drilling contingency activities (re-spud, sidetrack, suspension, EDS, lost-circulation, contingent cementing, pipe severance) | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               |
| Operation of facilities, equipment and vehicles                                                                               | +          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 1                 | 20                    | Negligible | High                       | POSITIVE            |

| Community H&S                                               |   |   |   |   |   |   |   |   |   |   |   |    |            |      |       |
|-------------------------------------------------------------|---|---|---|---|---|---|---|---|---|---|---|----|------------|------|-------|
| Logistics base chemicals management                         | - | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | 19 | Negligible | High | MINOR |
| Logistics base waste management (incl. HW)                  | - | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | 19 | Negligible | High | MINOR |
| Logistics base operation – disruption to port activities    | - | 1 | 1 | 4 | 1 | 1 | 2 | 1 | 4 | 1 | 1 | 20 | Negligible | High | MINOR |
| Onshore storage and transport of radioactive sealed sources | - | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 16 | Negligible | High | MINOR |
| Helicopter transfers between heliport and MODU              | - | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | 19 | Negligible | High | MINOR |

### 10.1.10.2.3 Demobilisation and Abandonment Phase

During demobilisation, Community H&S interactions are limited to the routine collection and transport of remaining waste streams by licensed contractors (in accordance with the Waste Management Plan, Annex 04) and to the removal, retention or transfer, as agreed with the relevant facility operator, of the temporary logistics base and helicopter hangar. Waste contractor collections involve a temporary, low-intensity increase in heavy-vehicle movements within and around the Port of Igoumenitsa and standard hazardous-waste transport documentation and controls. The cessation of Project activities will remove the associated temporary interaction with other facility users.

In summary, with regard to their significance, waste contractor collections during demobilisation are assessed as negative (-), of negligible intensity (IN = 1), localised extent (EX = 1), immediate (MO = 4), temporary (PE = 1), short-term and fully reversible (RV = 1), non synergistic (SI = 1), indirect (EF = 1), discontinuous in occurrence (PR = 1), with immediate recovery potential (MC = 1), and non-cumulative (AC = 1); given the High significance of the Community H&S receptor, this impact is assessed as **Minor**. The cessation of Project use of the logistics base and helicopter hangar are assessed as **positive**.

| Community H&S                              |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |
|--------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|
| Project Activities / Elements              | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance |
| Dismantling and removal from the port area | +          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 2             | 1                 | 17 Negligible         | High                       | POSITIVE            |
| Waste contractor collections (all wastes)  | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16 Negligible         | High                       | MINOR               |
| Removal of helicopter hangar               | +          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 2             | 1                 | 17 Negligible         | High                       | POSITIVE            |

### 10.1.11 Social infrastructure

The assessment of potential impacts on social infrastructure considers the potential for Project activities to affect the capacity, accessibility and functioning of existing health, social protection and educational services

within the study area. In particular, it considers whether the Project could generate additional demand for existing services or restrict access to established social infrastructure

As established in the ESBS (Annex 02), the study area is served by an established network of social infrastructure operating at local, regional and national levels. Healthcare provision comprises primary healthcare facilities, regional hospitals and specialised referral centres, including the General Hospital of Corfu and the University Hospital of Ioannina, supported by local health centres and regional clinics in the Municipality of Igoumenitsa and the Regional Unit of Corfu. Social protection services are provided through regional Social Welfare Centre branches and other public social care units, while educational infrastructure includes established networks of kindergartens, primary and secondary schools, together with higher education provision through the Ionian University and the University of Ioannina.

The Project will use existing health and emergency services only incidentally and does not require the provision of new or expanded social infrastructure. The Project does not introduce a permanent resident population, require resettlement, or result in a sustained increase in demand for healthcare, social protection or educational services. Any use of existing public health or emergency services would therefore be occasional and associated principally with unforeseen circumstances rather than routine Project demand.

During the drilling preparation and mobilisation phase, temporary Project personnel and contractors will be present at the Port of Igoumenitsa and Corfu International Airport, while mobilisation activities take place within existing operational areas. The temporary increase in personnel associated with these activities is not expected to generate material additional demand for local healthcare, emergency, social protection or educational services. The activities are short-term and will not alter the capacity or accessibility of existing social infrastructure.

During the exploration drilling operations phase, the majority of Project personnel will be associated with the offshore MODU and marine support activities, with additional personnel supporting the logistics base and helicopter operations. The Project will continue to rely on existing regional healthcare and emergency-service infrastructure where required, but no material increase in routine service demand is anticipated. The temporary nature of the drilling campaign, the limited Project workforce relative to the wider population served by the existing infrastructure, and the implementation of Project-specific emergency and OHS arrangements mean that any additional demand on existing services is expected to be negligible. The offshore location of the MODU also means that the Project does not create a permanent demand for local schools, social care facilities or other community-based social infrastructure.

During demobilisation and abandonment, Project personnel and contractors associated with the temporary logistics and marine operations will be progressively demobilised and temporary facilities removed. This will further reduce any potential temporary demand generated by the Project, with no residual requirement for social infrastructure following completion of the exploration programme.

Overall, the Project is not expected to affect the capacity, accessibility or functioning of existing health, social protection or educational infrastructure. Any use of existing services will be incidental, temporary and associated principally with individual or unforeseen circumstances rather than a material increase in routine demand. The Project does not require new or expanded social infrastructure, does not introduce a permanent population, and does not result in restrictions on access to existing services.

The Social Infrastructure Valued Receptor is therefore considered to be of **Low significance**. Given the absence of a permanent Project-related population, the limited and temporary workforce, the incidental

nature of Project reliance on existing services, and the lack of anticipated increase in demand or restriction of access, the receptor is **scoped out** of further detailed impact assessment.

## 10.1.12 Impacts on technical infrastructure

### 10.1.12.1 Maritime infrastructure

#### 10.1.12.1.1 Drilling preparation and mobilisation phase

During the drilling preparation and mobilisation phase, potential impacts on maritime transport infrastructure will be associated with the temporary use of the Port of Igoumenitsa as the Project logistics base, mobilisation of the MODU to the offshore well location, and initial support vessel movements. The Port of Igoumenitsa is a major national port and a key maritime gateway for domestic and international ferry, Ro-Ro, freight and passenger traffic, including routes to Corfu, Lefkimmi, Paxoi, Patras and Italian Adriatic ports. As a result, Project activities may temporarily interact with existing port operations, berth use, cargo handling areas, internal port circulation and vessel traffic approaching or departing the port.

Potential effects during mobilisation may include short-term and localised increases in vessel traffic, loading and unloading activity, use of quay space, and coordination requirements with existing ferry and freight movements. These effects will occur within an already operational port environment designed to accommodate intensive maritime and logistics activity. No new port infrastructure, dredging, reclamation, quay modification or permanent alteration of maritime transport infrastructure will be required.

Offshore, the transit of the MODU and support vessels to the well location may temporarily interact with established maritime traffic routes in the northern Ionian Sea, including the dense Corfu-mainland corridor and broader ferry and commercial navigation routes linking Greece with Italy. These interactions will be managed through standard maritime safety procedures, navigational warnings, coordination with competent authorities and compliance with port and navigation requirements.

In summary, with regard to their significance, the impacts on maritime transport infrastructure during the mobilisation phase are assessed as negative (-), with low intensity (IN = 2), localised (EX = 2), occurring immediately during mobilisation activities (MO = 4), coincident with the mobilisation period (PE = 1), short-term and fully reversible (RV = 1), with moderate synergistic interaction effects (SI = 2), direct (EF = 4), discontinuous in nature (PR = 1), characterised by short-term recovery potential (MC = 2), and non-cumulative (AC = 1). In terms of their overall significance, these impacts are assessed as **moderate**. Following the implementation of prevention and mitigation measures described in **Chapter 11** of this ESIA, **residual impacts** are assessed as **minor**.

| Impacts on maritime transport infrastructure         |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                              |
|------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|------------------------------|
| Project Activities / Elements                        | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Residual Impact Significance |
| Mobilisation of MODU to well site – power generation | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 1                 | 26 Low                | High                       | MODERATE            | MINOR                        |

#### 10.1.12.1.2 Exploration drilling operations phase

During the exploration drilling operations phase, impacts on maritime transport infrastructure will arise mainly from routine support vessel movements between the Port of Igoumenitsa and the MODU, the presence of the MODU at the offshore drilling location, and the establishment of the temporary 500 m safety zone. The safety zone will temporarily restrict access to a small area around the drilling unit and may require passing vessels, including commercial or fishing vessels, to maintain safe separation from the MODU.

The Project will not physically affect port infrastructure, ferry terminals, navigation channels, port approaches or established shipping lanes. The Port of Igoumenitsa will continue to operate as a major transport node, and Project-related vessel movements are expected to represent only a minor addition to the existing level of maritime traffic associated with domestic ferries, international Adriatic routes, freight and Ro-Ro operations. Similarly, the Corfu-Igoumenitsa ferry corridor and the main port approaches to Corfu and Igoumenitsa are not expected to be materially affected.

Potential impacts may include temporary increases in vessel traffic, additional coordination requirements for port entry and departure, and minor route awareness requirements for vessels operating in the vicinity of the offshore safety zone. These effects will be managed through Notices to Mariners, NAVTEX or equivalent navigational communications, liaison with port authorities, vessel traffic coordination and adherence to maritime safety procedures.

Potential impacts on port infrastructure would therefore relate mainly to temporary operational demand rather than physical effects. These may include additional berth use, vessel turnaround, loading and unloading of supplies, temporary laydown of materials, waste transfer, logistics coordination, and use of existing port access and support services. No new port infrastructure, dredging, quay modification or permanent change to port facilities is anticipated.

According to the traffic and navigation assessment (**Annex 09**), impacts from Project vessels within port limits, including transit to and from Igoumenitsa, are assumed to be managed by the ports themselves. Accordingly, any routine interaction with port infrastructure is expected to be managed through standard port authority procedures, berth allocation, vessel scheduling, port traffic management and compliance with applicable maritime requirements.

In summary, with regard to their significance, the impacts on maritime transport infrastructure during the drilling operations phase are assessed as negative (-), of negligible to low intensity (IN = 1 – 2), localised (EX=2), immediate (MO=4), temporary throughout the drilling period (PE=1), short-term and fully reversible following cessation of activities (RV=1), with limited synergistic effects with existing maritime transport operations (SI=2), direct (EF=4), irregular (movement of support vessels) or continuous (PR = 1 – 4), with immediate recovery after completion of drilling (MC=1), and non-cumulative (AC=1). Overall, these impacts are assessed as **moderate**. Following the implementation of prevention and mitigation measures described in **Chapter 11** of this ESIA, **residual impacts** are assessed as **minor**.



| Impacts on maritime transport infrastructure                   |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                              |
|----------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|------------------------------|
| Project Activities / Elements                                  | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Residual Impact Significance |
| MODU safety exclusion zone and support/supply vessel transfers | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 4                | 2             | 1                 | 26 Low                | High                       | MODERATE            | MINOR                        |
| Support activities (movement of support vessels)               | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 1                 | 23 Low                | High                       | MODERATE            | MINOR                        |
| Logistics base operation - disruption to port activities       | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 4                | 2             | 1                 | 29 Low                | High                       | MODERATE            | MINOR                        |

### 10.1.12.1.3 Demobilisation and abandonment phase

During the demobilisation and abandonment phase, impacts on maritime transport infrastructure will be associated with departure of the MODU and support vessels from the well location, return of equipment and materials to the Port of Igoumenitsa, and removal, retention or asset transfer, as agreed with the relevant facility operator, of temporary shore base facilities. This phase may generate a short-term increase in vessel movements, unloading operations and logistics activity at the port, similar in nature to the mobilisation phase.

Potential interactions may occur with ferry, freight, Ro-Ro and passenger services at Igoumenitsa, particularly if demobilisation activities coincide with periods of high port traffic or seasonal tourism demand. However, these interactions will be temporary and operational in nature and will be managed through port scheduling, berth coordination, designated loading and unloading areas, and communication with the competent port authorities.

During dismantling works and removal of temporary Project facilities from the port area, minor short-term adverse effects may occur due to vehicle movements, lifting operations, waste collection, temporary occupation of working areas and potential interaction with normal port traffic. These effects will be localised, temporary and managed through port coordination, designated access routes, appropriate scheduling and standard health, safety and environmental controls. At the same time, the removal of temporary offices, storage areas, equipment, signage and support facilities will release occupied space and restore the affected port areas to their normal operational use. This will have a minor positive effect on port operations by reducing temporary congestion, removing Project-related constraints and returning port circulation and logistics areas to baseline conditions.

No permanent modification of maritime transport infrastructure will be required. Following completion of demobilisation, Project-related vessel traffic and port logistics will cease, and maritime transport conditions will return to baseline port operations.

In summary, with regard to their significance, the impacts on maritime transport infrastructure during the demobilisation / abandonment phase are assessed as negative (-), with negligible intensity (IN = 1),

localised (EX = 2), occurring immediately during demobilisation activities (MO = 4), coincident with the demobilisation period (PE = 1), short-term and fully reversible (RV = 1), with moderate synergistic interaction effects (SI = 2), direct (EF = 4), discontinuous in nature (PR = 1), characterised by short-term recovery potential (MC = 2), and non-cumulative (AC = 1). In terms of their overall significance, these impacts are assessed as **moderate**. Following the implementation of prevention and mitigation measures described in **Chapter 11** of this ESIA, **residual impacts** are assessed as **minor**.

| Impacts on maritime transport infrastructure |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |     |                            |                     |                              |
|----------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|-----|----------------------------|---------------------|------------------------------|
| Project Activities / Elements                | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |     | Valued Receptor Assessment | Impact Significance | Residual Impact Significance |
| Removal of temporary subsea infrastructure   | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 21                    | Low | High                       | MODERATE            | MINOR                        |
| Dismantling and removal from the port area   | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 21                    | Low | High                       | MODERATE            | MINOR                        |

#### 10.1.12.2 Other transport infrastructure

##### 10.1.12.2.1 Drilling preparation and mobilisation phase

During the drilling preparation and mobilisation phase, potential impacts on road traffic infrastructure will be associated with the transport of equipment, materials, containers, consumables and personnel to the temporary shore base within the Port of Igoumenitsa, as well as limited preparatory activities at Corfu International Airport, where applicable. The main road interaction will occur in the Igoumenitsa area, particularly along the access routes connecting the port with the Egnatia Odos motorway, the Preveza-Igoumenitsa National Road and the local road network serving the port zone.

The additional Project-related vehicle movements are expected to be temporary and limited in scale compared with the existing traffic associated with the Port of Igoumenitsa, ferry operations, commercial logistics and local urban mobility. No new road infrastructure, road widening or permanent modification of the road network will be required. Potential effects may include short-term increases in heavy goods vehicle movements, minor delays at port access points, and temporary pressure on internal port circulation areas during equipment delivery and staging.

The effects on local road network will be managed through logistics planning, use of designated port access routes, scheduling of deliveries and coordination with port authorities.

The installation of temporary signage and directional markings during mobilisation is expected to have a minor positive impact on road traffic infrastructure and internal port circulation. These measures will improve the organisation of vehicle movements within the shore base and port area, support safe access to loading, unloading and storage zones, and reduce the potential for vehicle conflicts, delays or inefficient routing. The positive effect will be localised and temporary, but beneficial for traffic management, occupational safety and coordination of logistics activities during the Project.

In summary, negative (–) impacts on transport infrastructure during the mobilisation phase are assessed as having low intensity (IN = 2), localised (EX = 2), occurring immediately during mobilisation activities (MO = 4), coincident with the mobilisation period (PE = 1), short-term and fully reversible (RV = 1), synergistic (SI = 2), direct (EF = 4), discontinuous in nature (PR = 1), characterised by short-term recovery potential (MC = 2), and non-cumulative (AC = 1). In terms of their overall significance, these impacts are assessed as **minor**.

| Impacts on transport infrastructure      |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |     |                            |                     |
|------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|-----|----------------------------|---------------------|
| Project Activities / Elements            | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |     | Valued Receptor Assessment | Impact Significance |
| Install signage and directional markings | +          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 4                | 2             | 1                 | 29                    | Low | Medium                     | POSITIVE            |
| Mobilise / install shore base equipment  | -          | 2              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 1                 | 24                    | Low | Medium                     | MINOR               |
| Onshore loading/unloading or staging     | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 1                 | 26                    | Low | Medium                     | MINOR               |

#### 10.1.12.2.2 Exploration drilling operations phase

During the exploration drilling operations phase, road traffic impacts will be mainly associated with routine shore base support activities, including delivery of supplies, movement of personnel, transfer of waste to licensed contractors, and occasional transport of equipment or materials between the port and authorised facilities.

Road movements related to the Project will take place within an area already served by established port access roads and the wider regional road network. The Port of Igoumenitsa is served by established road connections, including direct access to the Egnatia Motorway and the Igoumenitsa–Preveza National Road, while the Igoumenitsa Ring Road provides an alternative route that allows traffic to bypass the city centre. These roads are designed to support port-related transport and commercial vehicle movements.

Existing port traffic is already organised through separate access gates for international ferry, domestic ferry and cruise traffic, reducing potential conflicts between different vehicle types and users. The Project will not require abnormal continuous road traffic volumes, road closures or changes to the functional role of existing roads. Any additional traffic will be absorbed within the normal operational context of the port and surrounding transport network.

The surrounding road network is considered to have sufficient available capacity to accommodate port-related traffic. The practical capacity of the external port road has been conservatively estimated at approximately 2,500 Passenger Car Units (PCU) per hour, while even a high-demand scenario involving the simultaneous arrival of a domestic ferry and cruise ship would generate approximately 1,260 PCU per hour. Under this scenario, the network would continue to operate within available capacity and without significant congestion.

Vehicle movements due to Project operation are expected to be low compared with existing port activity. Traffic associated with establishing storage facilities, onloading and offloading from exploration vessels, customs arrangements and parking is not expected to require significant vehicle movements. During

operations, traffic will mainly comprise logistical support, waste management and servicing, equipment deliveries, staff access, forklifts, flatbed trucks, mobile cranes and pickup trucks, with most movements occurring within the port supply-base area.

Potential impacts on road transport infrastructure would therefore relate mainly to temporary increases in local vehicle movements within and around the port, possible short-term interactions with existing ferry and port traffic, and limited risk of driver delay or traffic conflicts. No road widening, new public road infrastructure, permanent alteration to the highway network or long-term reduction in road capacity is anticipated.

Potential impacts may include minor increases in heavy vehicle movements near the port, temporary interaction with ferry-related traffic peaks, and limited additional demand on internal port circulation areas.

The effects on local road network will be managed through coordinated logistics planning, avoidance of unnecessary vehicle movements, use of approved transport contractors and compliance with port traffic management procedures. The implementation of a Traffic Management Plan will further reduce potential impacts by defining traffic management responsibilities, managing vehicle movements, reducing traffic-related hazards, and applying monitoring and compliance procedures.

Helicopter transfers between Corfu International Airport and the MODU will interact with existing airport infrastructure through the use of established aviation facilities, including the heliport or designated helicopter operating area, air traffic control services, refuelling arrangements, passenger handling procedures, security controls and emergency response capacity. The transfers will support crew changes, personnel movements, urgent logistics and, if required, emergency response functions during the offshore drilling campaign.

The Project is expected to involve a limited number of helicopter flights per week, using a medium twin-engine helicopter such as an AW139 or equivalent. This level of activity is minor in comparison with the normal operational capacity of Corfu International Airport, particularly as the airport already supports commercial aviation, general aviation, emergency services and seasonal tourism-related air traffic. Therefore, no expansion, upgrade or permanent modification of airport infrastructure is expected to be required.

Potential impacts may include a temporary and limited increase in helicopter movements, use of apron or heliport space, minor additional demand on aviation fuel supply, passenger processing and coordination with airport operational services. These effects will be operational in nature and will be managed through standard airport procedures, flight scheduling, air traffic control coordination, aviation safety requirements and emergency preparedness arrangements.

During peak tourism periods, helicopter transfers may coincide with higher airport activity. However, the number of Project-related flights will remain limited and can be scheduled to avoid operational conflicts where practicable. As a result, no significant effect on airport capacity, runway operations, passenger services, safety systems or airport infrastructure is anticipated.

In summary, with regard to their significance, the impacts on transport infrastructure during the drilling operations phase are assessed as negative (-), of negligible to low intensity (IN = 1 – 2), localised (EX=2), immediate (MO=4), temporary throughout the drilling period (PE=1), short-term and fully reversible following cessation of activities (RV=1), with limited synergistic effects with existing transport operations (SI=2), direct

(EF=4), periodic (helicopter transfers) or continuous (PR = 2 – 4), with immediate recovery after completion of drilling (MC=1), and non-cumulative (AC=1). Overall, these impacts are assessed as **minor**.

| Impacts on transport infrastructure                      |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |     |                            |                     |
|----------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|-----|----------------------------|---------------------|
| Project Activities / Elements                            | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |     | Valued Receptor Assessment | Impact Significance |
| Operation of facilities, equipment and vehicles          | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 4                | 1             | 1                 | 25                    | Low | Medium                     | MINOR               |
| Logistics base operation - disruption to port activities | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 4                | 1             | 1                 | 28                    | Low | Medium                     | MINOR               |
| Helicopter transfers between heliport and MODU           | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 2                | 1             | 1                 | 23                    | Low | Medium                     | MINOR               |

#### 10.1.12.2.3 Demobilisation and abandonment phase

During the demobilisation and abandonment phase, road traffic impacts will arise from the removal of equipment, temporary facilities, materials and waste from the Port of Igoumenitsa, together with waste contractor collections and transport of residual materials to authorised facilities. This phase may generate a short-term increase in heavy vehicle movements, similar in nature to the mobilisation phase, but limited in duration.

The main affected areas will be the internal port road network, port access roads and connections to the Egnatia Odos and national road network. No permanent changes to road infrastructure will be required. Potential effects may include temporary congestion at port access points, increased heavy vehicle circulation within the port area, and short-term interaction with ferry, commercial and tourism-related traffic.

The effects on local road network will be managed through coordination with port authorities, scheduling of vehicle movements, use of designated loading and access areas, and prompt removal of materials and waste from the shore base.

Following completion of demobilisation, Project-related road traffic will cease, and traffic conditions will return to baseline port operation.

In summary, with regard to their significance, the impacts on transport infrastructure during the demobilisation / abandonment phase are assessed as negative (-), with negligible intensity (IN = 1), localised (EX = 2), occurring immediately during demobilisation activities (MO = 4), coincident with the demobilisation period (PE = 1), short-term and fully reversible (RV = 1), with moderate synergistic interaction effects (SI = 2), direct (EF = 4), discontinuous in nature (PR = 1), characterised by short-term recovery potential (MC = 2), and non-cumulative (AC = 1). In terms of their overall significance, these impacts are assessed as **negligible**.

| Impacts on transport infrastructure        |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |     |                            |                     |
|--------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|-----|----------------------------|---------------------|
| Project Activities / Elements              | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |     | Valued Receptor Assessment | Impact Significance |
| Dismantling and removal from the port area | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 21                    | Low | Medium                     | MINOR               |
| Waste contractor collections (all wastes)  | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 21                    | Low | Medium                     | MINOR               |

### 10.1.12.3 Energy, telecommunications

#### 10.1.12.3.1 Drilling preparation and mobilisation phase

During the mobilisation phase, limited temporary demands will arise from the establishment of the shore base within the Port of Igoumenitsa, including connection of temporary offices, lighting, welfare facilities and communications equipment. These requirements will be met through existing port electricity distribution infrastructure and local telecommunications networks, which are already integrated into the wider interconnected Greek transmission and distribution system operated by ADMIE/IPTO and PPC S.A.

The additional electrical load associated with mobilisation activities is expected to be small, short-term and well within the available capacity of the existing low- and medium-voltage distribution network serving the port area. No reinforcement of transmission-level infrastructure is anticipated.

Telecommunications demand will be limited to standard operational communications, data transfer, and coordination between offshore and onshore teams. Existing fixed-line, mobile and broadband networks within Igoumenitsa and the wider Epirus region are well developed, and no significant capacity constraints are expected.

No impacts are anticipated on natural gas infrastructure, as the Project will not connect to or utilise the national gas transmission system.

In summary, with regard to their significance, the impacts on energy and telecommunications infrastructure during the mobilisation phase are assessed as negative (-), with negligible intensity (IN = 1), localised (EX = 1), occurring immediately during mobilisation activities (MO = 4), coincident with the mobilisation period (PE = 1), short-term and fully reversible (RV = 1), with moderate synergistic interaction effects (SI = 2), direct (EF = 4), discontinuous in nature (PR = 1), characterised by short-term recovery potential (MC = 2), and non-cumulative (AC = 1). In terms of their overall significance, these impacts are assessed as **negligible**.

| Impacts on energy and telecommunications infrastructure |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |
|---------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                           | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| Onshore base equipment and utilities installation       | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Low                        | NEGLECTIBLE         |

### 10.1.12.3.2 Exploration drilling operations phase

During offshore drilling operations, the principal energy demand will be associated with the MODU and support vessels, which will be covered by on board systems, and will not rely on shore-based electricity generation or distribution networks. Consequently, there will be no direct demand on the local electricity transmission system arising from offshore drilling activities.

The shore base will operate using existing port electricity and telecommunications infrastructure for administrative functions, logistics coordination, waste management activities, and routine operational communications. These demands are expected to remain minor in the context of the overall capacity of the Igoumenitsa port electrical network and regional distribution system.

Telecommunications infrastructure will be used for offshore–onshore coordination, including operational monitoring and logistics. The national mobile and broadband networks in the region have sufficient capacity to accommodate these temporary Project requirements. Therefore, no significant effects on telecommunications infrastructure are anticipated.

Within the logistics base area, minor and intermittent increases in electricity demand may occur due to cargo handling equipment, lighting, and temporary storage operations. However, these activities are short-duration and dispersed and will not materially affect regional energy infrastructure.

No interaction is expected with natural gas infrastructure, which is not present in the immediate project area.

In summary, with regard to their significance, the impacts on energy and telecommunications infrastructure during the drilling operations phase are assessed as negative (-), of negligible intensity (IN=1), localised (EX=2), immediate (MO=4), temporary throughout the drilling period (PE=1), short-term and fully reversible following cessation of activities (RV=1), with limited synergistic effects with existing port operations (SI=2), direct (EF=4), continuous (PR=4), with immediate recovery after completion of drilling (MC=1), and non-cumulative (AC=1). Overall, these impacts are assessed as **negligible**.

| Impacts on energy and telecommunications infrastructure  |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |     |                            |                     |  |
|----------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|-----|----------------------------|---------------------|--|
| Project Activities / Elements                            | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |     | Valued Receptor Assessment | Impact Significance |  |
| Logistics base operation - disruption to port activities | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 4                | 1             | 1                 | 25                    | Low | Low                        | NEGLIGIBLE          |  |

### 10.1.12.3.3 Demobilisation and Abandonment Phase

During demobilisation, energy and telecommunications demands at the shore base will gradually reduce as equipment is dismantled and materials are removed. Electricity use will be mainly for waste handling, lifting operations, container loading, and equipment disassembly activities; however, these are short-term and occur within the existing capacity of port infrastructure.



All waste contractor activities, including vehicle movements, container handling and loading operations, will be supported by existing port utilities without requiring upgrades or extensions to the electricity distribution network.

Telecommunications usage may temporarily increase during coordination of logistics, waste transfer documentation, and reporting requirements associated with site closure; however, this remains well within normal operational usage patterns of the port and municipal communication systems.

Following completion of demobilisation, all temporary facilities will be removed, and energy and telecommunications demand will return to baseline port conditions.

In summary, with regard to their significance, the impacts on energy and telecommunications infrastructure during the demobilisation / abandonment phase are assessed as negative (–), with negligible intensity (IN = 1), localised (EX = 1), occurring immediately during demobilisation activities (MO = 4), coincident with the demobilisation period (PE = 1), short-term and fully reversible (RV = 1), with moderate synergistic interaction effects (SI = 2), direct (EF = 4), discontinuous in nature (PR = 1), characterised by short-term recovery potential (MC = 2), and non-cumulative (AC = 1). In terms of their overall significance, these impacts are assessed as **negligible**.

| Impacts on energy and telecommunications infrastructure |            |                |             |             |                  |                    |             |             |                  |               |                   |                       |            |                            |                     |
|---------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|-------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|
| Project Activities / Elements                           | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synerg (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance |
| Dismantling and removal from the port area              | -          | 1              | 1           | 4           | 1                | 1                  | 1           | 4           | 1                | 2             | 1                 | 20                    | Negligible | Low                        | NEGLIGIBLE          |

#### 10.1.12.4 Environmental infrastructure

Environmental infrastructure receptors comprise the existing municipal and port infrastructure serving the Port of Igoumenitsa, including waste collection, transfer and disposal systems, port reception facilities for ship-generated waste and wastewater management facilities.

##### 10.1.12.4.1 Drilling preparation and mobilisation phase

Activities during this phase will include mobilisation of equipment and materials, loading and unloading operations, warehousing and storage activities, office and logistics support, and preparation of supplies for offshore transfer. Interactions with the existing environmental infrastructure of Igoumenitsa will be limited to the temporary use of the Port of Igoumenitsa shore base and associated municipal waste and wastewater management services.

Waste generated during mobilisation will consist primarily of packaging materials (paper, cardboard, wood and plastics), small quantities of scrap metal, domestic-type wastes from shore base personnel, and limited quantities of hazardous wastes associated with equipment preparation and maintenance activities, such as waste oils, lubricants, used absorbents and empty chemical containers. Based on the indicative waste estimates (Table 6.23), approximately 2.3 tonnes of non-hazardous waste may be generated during the mobilisation period.

These waste streams will be segregated, temporarily stored within designated areas at the shore base, and subsequently collected by authorised waste contractors.

During the mobilisation phase, waste generated from logistics, equipment preparation and shore base activities will be segregated and managed through the Project's dedicated Waste Management System. Offshore waste returned to shore and waste generated at the supply base will be temporarily staged before being transferred by licensed contractors to authorised treatment, recovery or disposal facilities. The quantities of waste generated during mobilisation will be relatively small, the shore-based workforce will be limited, and the activities will be temporary. As a result, the additional demand on existing licensed waste management facilities serving the Igoumenitsa area is expected to be negligible. No expansion of existing waste management infrastructure or construction of new waste handling facilities will be required. Consequently, impacts on the existing environmental infrastructure are expected to be localised, short term and of negligible significance.

In summary, with regard to their significance, the impacts on environmental infrastructure during the mobilisation phase are assessed as negative (-), with negligible intensity (IN = 1), localised (EX = 1), occurring immediately during mobilisation activities (MO = 4), coincident with the mobilisation period (PE = 1), short-term and fully reversible (RV = 1), with moderate synergistic interaction effects (SI = 2), direct (EF = 4), discontinuous in nature (PR = 1), characterised by short-term recovery potential (MC = 2), and non-cumulative (AC = 1). In terms of their overall significance, these impacts are assessed as **negligible**.

| Impacts on environmental infrastructure           |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |
|---------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|
| Project Activities / Elements                     | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment |
| Onshore base equipment and utilities installation | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20 Negligible         | Medium NEGLIGIBLE          |

#### 10.1.12.4.2 Exploration Drilling operations phase

Offshore drilling activities will generate several waste streams that cannot be discharged to the marine environment and will therefore require controlled collection, temporary storage, transport and subsequent treatment, recovery or disposal through authorised onshore facilities. These waste streams are expected to include municipal solid waste from accommodation and catering activities on the MODU and support vessels, hazardous and operational wastes arising from drilling and maintenance activities, such as waste oils and oily residues, electrical and electronic equipment waste, used cooking oil, spent chemicals, contaminated absorbents, filters, paint residues, empty chemical containers and other maintenance-related materials.

Based on available estimates, offshore operations are expected to generate approximately 1.2 tonnes of general non-recyclable waste, 1.5 tonnes of paper, wood and cardboard, 2.35 tonnes of metals, 375 kg of electrical waste and 75 kg of used cooking oil over the drilling campaign. Hazardous waste is estimated to include approximately 29 m<sup>3</sup> of oily sludge, 4.6 tonnes of oil-contaminated waste, 1.4 tonnes of paints and solvents, and 7.2 tonnes of chemical waste (Table 6.22). In addition, onshore operations are expected to generate approximately 1.3 tonnes of general non-recyclable waste, paper, 1.6 tonnes of wood and cardboard, 80 kg of plastic, 1.7 tonnes of metal and 600 kg of food waste (Table 6.23).

Where logging-while-drilling (LWD) results indicate the presence of hydrocarbons, or where cuttings become contaminated due to drilling through hydrocarbon-bearing formations or operational upsets, such materials will not be discharged to sea. Instead, they will be recovered using onboard containment systems such as skips or vacuum transfer units, securely stored, and subsequently transferred to shore for treatment and disposal at licensed facilities.

All wastes will be managed under the Project's Waste Management System, which ensures segregation at source, controlled storage onboard the MODU and support vessels, transfer to the shore base, and onward handling by licensed waste contractors. The Project will not rely on municipal or port-operated waste management services for treatment or disposal. Instead, waste will be transported directly to authorised regional facilities in accordance with the Project Waste Management Plan and applicable national legislation. Waste transfer operations will occur periodically throughout the approximately 67-day drilling campaign, and no new waste treatment, storage or disposal infrastructure will be required. In addition, waste segregation at source will maximise opportunities for recycling and recovery, thereby reducing the volume of waste requiring final disposal.

Hazardous waste received at the shore base will be stored only temporarily in designated containment areas for the minimum time required to organise onward transport, thereby avoiding prolonged storage and limiting any pressure on local infrastructure.

Accordingly, no significant effects on the existing waste management infrastructure of the Port of Igoumenitsa or the wider municipal waste management system are anticipated.

Wastewater generated by the small shore-based workforce (approximately six personnel) will consist primarily of sanitary effluent from portable chemical toilets serviced by licensed contractors and will not place a material demand on municipal wastewater treatment infrastructure. Offshore wastewater generated by the MODU and support vessels will be managed onboard in accordance with MARPOL requirements and either discharged offshore under controlled conditions or transferred where necessary, without reliance on municipal wastewater systems. Overall, the Project is not expected to result in adverse effects on the capacity or operation of existing wastewater infrastructure.

In summary, with regard to their significance, the impacts on environmental infrastructure during the drilling operations phase are assessed as negative (–), of low intensity (IN=2), extending to the regional area (EX=4), immediate (MO=4), temporary throughout the drilling period (PE=1), short-term and fully reversible following cessation of activities (RV=1), with limited synergistic effects with existing port operations (SI=2), direct (EF=4), periodic (PR=2), with short-term recovery after completion of drilling (MC=2), and non-cumulative (AC=1). Overall, these impacts are assessed as **minor**.

| Impacts on environmental infrastructure        |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |     |                            |                     |
|------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|-----|----------------------------|---------------------|
| Project Activities / Elements                  | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |     | Valued Receptor Assessment | Impact Significance |
| Logistics base waste management (including HW) | -          | 2              | 4           | 4           | 1                | 1                  | 2            | 4           | 2                | 2             | 1                 | 31                    | Low | Medium                     | MINOR               |

### 10.1.12.4.3 Demobilisation and abandonment phase

During the demobilisation and abandonment phase, interactions with environmental infrastructure will be associated with the removal of offshore equipment, the decommissioning of the MODU spread, and the systematic return of materials, consumables and waste streams to the shore base at the Port of Igoumenitsa for onward management. During this phase, waste will predominantly consist of residual municipal waste, packaging materials, scrap metal, surplus consumables, cleaning materials, used absorbents and limited quantities of hazardous waste generated from equipment cleaning, maintenance activities and decommissioning operations.

In addition, accumulated offshore waste retained onboard for controlled disposal onshore—such as oily residues, waste chemicals, contaminated materials and other non-dischargeable waste streams—will be transferred to the shore base and to appropriately licensed waste management facilities via approved contractors under the Project Waste Management System.

Based on indicative estimates, approximately 2.3 tonnes of non-hazardous waste may be managed at the shore base during demobilisation activities, in addition to offshore-generated waste. All waste streams will be handled through the Project's dedicated waste management arrangements and transferred to authorised facilities in accordance with applicable regulatory requirements and the Project Waste Management Plan.

Although demobilisation represents a short-term peak in waste handling and logistics activity, the quantities involved are modest and will be managed through appropriately authorised contractors and facilities selected in accordance with the Project Waste Management Plan. No reliance will be placed on expansion of municipal infrastructure, and no new waste treatment or storage facilities will be required. Utility use at the shore base will progressively decline as offshore assets are demobilised and onshore support activities cease operation. Once demobilisation is complete, all temporary facilities and associated infrastructure will be removed, retained or transferred as agreed with the relevant facility operator, and no residual demand on local environmental infrastructure is expected.

In summary, with regard to their significance, the impacts on environmental infrastructure during the demobilisation / abandonment phase are assessed as negative (-), with negligible intensity (IN = 1), localised (EX = 1), occurring immediately during demobilisation activities (MO = 4), coincident with the demobilisation period (PE = 1), short-term and fully reversible (RV = 1), with moderate synergistic interaction effects (SI = 2), direct (EF = 4), discontinuous in nature (PR = 1), characterised by short-term recovery potential (MC = 2), and non-cumulative (AC = 1). In terms of their overall significance, these impacts are assessed as **negligible**.

| Impacts on environmental infrastructure   |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |
|-------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|
| Project Activities / Elements             | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment |
| Waste contractor collections (all wastes) | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20 Negligible         | Medium NEGLIGIBLE          |

### 10.1.13 Summary of impacts from the regular / routine operation of the project

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This section summarises the environmental and social impacts arising from the regular (routine) operation of the Project. The summary is based on the detailed assessments presented in the preceding sections and provides the corresponding impact significance and residual significance following the implementation of the proposed mitigation measures.

**Table 10-21: Summary of impacts from the normal/routine operation of the project**

| Environmental & Social Parameters             | Valued Receptors         | Project Activities / Elements                                                                                                   | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|----------------------------------|
| Drilling Preparation and Mobilisation Phase   |                          |                                                                                                                                 |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |                                  |
| Climate Resilience                            | Microclimate             | Mobilisation of MODU to well site – power generation                                                                            | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 1           | 1                | 2             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          | NEGLIGIBLE                       |
| Morphological and Topological Characteristics | Morphology               | Onshore utility connection works                                                                                                | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          | NEGLIGIBLE                       |
| Morphological and Topological Characteristics | Landscape                | Installation of wharf crane (if applicable), utility connections, prefabricated office units, welfare and sanitation facilities | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Low                        | NEGLIGIBLE          | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Geology                  | Onshore utility connection works                                                                                                | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Slope stability          | Onshore utility connection works                                                                                                | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Soil                     | Onshore base equipment and utilities installation                                                                               | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Low                        | NEGLIGIBLE          | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Soil                     | Onshore loading/unloading or staging                                                                                            | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 1                 | 21                    | Low        | Low                        | NEGLIGIBLE          | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Seabed / Sediment        | Mobilisation of MODU to well site – power generation                                                                            | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 21                    | Low        | Medium                     | MINOR               | MINOR                            |
| Biotic Environment                            | Benthic fauna / habitats | Mobilisation of MODU to well site – power generation                                                                            | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 1                | 1             | 4                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          | NEGLIGIBLE                       |
|                                               | Marine Mammals           | Mobilisation of MODU to well site – power generation (direct spatial disturbance)                                               | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               | MINOR                            |

| Environmental & Social Parameters | Valued Receptors | Project Activities / Elements                                                                        | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|------------------|------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|----------------------------------|
|                                   | Marine Mammals   | Mobilisation of MODU to well site – power generation (direct underwater noise disturbance)           | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Marine Mammals   | Mobilisation of MODU to well site – power generation (indirect impacts)                              | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Sea Turtles      | Mobilisation of MODU to well site – power generation (direct spatial disturbance)                    | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Sea Turtles      | Mobilisation of MODU to well site – power generation (direct underwater noise disturbance)           | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Sea Turtles      | Mobilisation of MODU to well site – power generation (indirect impacts)                              | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Fish fauna       | Mobilisation of MODU to well site – power generation (direct spatial disturbance)                    | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Fish fauna       | Mobilisation of MODU to well site – power generation (direct UWN)                                    | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Fish fauna       | Mobilisation of MODU to well site – power generation (indirect impacts)                              | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Avifauna         | Mobilisation of MODU to well site – power generation (collisions)                                    | -          | 2              | 8           | 4           | 2                | 1                  | 2            | 4           | 1                | 3             | 1                 | 40                    | Low        | Medium                     | MINOR               | MINOR                            |
|                                   | Avifauna         | Mobilisation of MODU to well site – power generation (increased energy cost/ exhaustion/ starvation) | -          | 2              | 8           | 4           | 2                | 1                  | 2            | 4           | 1                | 3             | 1                 | 40                    | Low        | Medium                     | MINOR               | MINOR                            |



| Environmental & Social Parameters | Valued Receptors                                         | Project Activities / Elements                                                              | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |            |
|-----------------------------------|----------------------------------------------------------|--------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|------------|
|                                   | Avifauna                                                 | Mobilisation of MODU to well site – power generation (resting/roosting sites)              | +          | 2              | 8           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 37                    | Low                        | Medium              | POSITIVE                         | POSITIVE   |
|                                   | Protected Areas                                          | Mobilisation of MODU to well site – power generation (direct underwater noise disturbance) | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR      |
|                                   | Other important natural areas                            | As per marine mammals, sea turtles and fish fauna                                          |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |            |
| Anthropogenic Environment         | Spatial Planning and Land Use                            | Install temporary fencing around entire base perimeter                                     | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | Medium              | NEGLIGIBLE                       | NEGLIGIBLE |
| Anthropogenic Environment         | Spatial Planning and Land Use                            | Mobilise wharf crane to designated crane area                                              | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       | NEGLIGIBLE |
| Anthropogenic Environment         | Spatial Planning and Land Use                            | Install wharf crane (if applicable)                                                        | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       | NEGLIGIBLE |
| Anthropogenic Environment         | Spatial Planning and Land Use                            | Install utility connections                                                                | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | Medium              | NEGLIGIBLE                       | NEGLIGIBLE |
| Anthropogenic Environment         | Spatial Planning and Land Use                            | Install prefabricated office units, welfare and sanitation facilities                      | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | Medium              | NEGLIGIBLE                       | NEGLIGIBLE |
| Anthropogenic Environment         | Spatial Planning and Land Use                            | Onshore loading/unloading or staging                                                       | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       | NEGLIGIBLE |
| Anthropogenic Environment         | Maritime uses                                            | Mobilise wharf crane to designated crane area                                              | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            | MINOR      |
| Anthropogenic Environment         | Maritime uses                                            | Install wharf crane (if applicable)                                                        | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            | MINOR      |
| Anthropogenic Environment         | Maritime uses                                            | Onshore loading/unloading or staging                                                       | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            | MINOR      |
| Anthropogenic Environment         | Maritime uses                                            | Mobilisation of MODU to well site – power generation                                       | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            | MINOR      |
| Anthropogenic Environment         | Structure and Functions of the Anthropogenic Environment |                                                                                            |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |            |
| Anthropogenic Environment         | Cultural Heritage                                        |                                                                                            |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |            |

| Environmental & Social Parameters | Valued Receptors        | Project Activities / Elements                                         | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|-------------------------|-----------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
| Socio-economic environment        | Economic activities     | Mobilisation (recruitment, employment, labour force)                  | +          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 25                    | Low                        | High                | POSITIVE                         |
| Socio-economic environment        | Economic activities     | Supply chain and procurement                                          | +          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 2                | 1             | 1                 | 26                    | Low                        | High                | POSITIVE                         |
| Socio-economic environment        | Economic activities     | Mobilise wharf crane to designated crane area                         | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Economic activities     | Install wharf crane (if applicable)                                   | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Economic activities     | Onshore loading/unloading or staging                                  | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Economic activities     | Install temporary helicopter hangar at Corfu                          | +          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 1                | 1             | 1                 | 17                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Economic activities     | Mobilisation of MODU to well site                                     | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 18                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S           | Install temporary fencing around entire base perimeter                | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S           | Install signage and directional markings                              | +          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | POSITIVE                         |
| Socio-economic environment        | Community H&S           | Mobilise wharf crane to designated crane area                         | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S           | Install wharf crane (if applicable)                                   | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S           | Install utility connections                                           | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S           | Install prefabricated office units, welfare and sanitation facilities | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S           | Onshore loading/unloading or staging                                  | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S           | Install temporary helicopter hangar at Corfu                          | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S           | Mobilisation of MODU to well site – power generation                  | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
| Social Infrastructure             | Social Infrastructure   |                                                                       |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |
| Technical Infrastructure          | Maritime Infrastructure | Mobilisation of MODU to well site – power generation                  | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 1                 | 26                    | Low                        | High                | MODERATE                         |

| Environmental & Social Parameters           | Valued Receptors                            | Project Activities / Elements                         | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|---------------------------------------------|---------------------------------------------|-------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
| Technical Infrastructure                    | Other transport infrastructure              | Install signage and directional markings              | +          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 4                | 2             | 1                 | 29                    | Low                        | Medium              | POSITIVE                         |
| Technical Infrastructure                    | Other transport infrastructure              | Mobilise / install shore base equipment               | -          | 2              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 1                 | 24                    | Low                        | Medium              | MINOR                            |
| Technical Infrastructure                    | Other transport infrastructure              | Onshore loading/unloading or staging                  | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 1                 | 26                    | Low                        | Medium              | MINOR                            |
| Technical Infrastructure                    | Technical Infrastructure (Energy, Telecoms) | Onshore base equipment and utilities installation     | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | Low                 | NEGLIGIBLE                       |
| Technical Infrastructure                    | Technical Infrastructure (Environmental)    | Onshore base equipment and utilities installation     | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       |
| Atmospheric Environment                     | Air quality                                 | Mobilisation of MODU to well site – power generation  | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 1                 | 23                    | Low                        | Medium              | MINOR                            |
| Atmospheric Environment                     | Air quality                                 | Onshore base equipment and utilities installation     | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       |
| Atmospheric Environment                     | Air quality                                 | Onshore loading/unloading or staging                  | -          | 2              | 1           | 4           | 1                | 1                  | 2            | 4           | 2                | 2             | 1                 | 25                    | Low                        | Medium              | MINOR                            |
|                                             | Air quality                                 | Hangar installation                                   | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       |
| Acoustic Environment, Vibrations, Radiation | Airborne noise                              | Mobilisation of MODU to well site – power generation  | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 1                 | 23                    | Low                        | Medium              | MINOR                            |
| Acoustic Environment, Vibrations, Radiation | Airborne noise                              | Support activities (movement of support vessels)      | -          | 2              | 4           | 4           | 1                | 1                  | 1            | 4           | 2                | 1             | 1                 | 29                    | Low                        | Medium              | MINOR                            |
| Acoustic Environment, Vibrations, Radiation | Airborne noise                              | Onshore base equipment and utilities installation     | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       |
| Acoustic Environment, Vibrations, Radiation | Airborne noise                              | Onshore loading/unloading or staging                  | -          | 2              | 1           | 4           | 1                | 1                  | 2            | 4           | 2                | 2             | 1                 | 25                    | Low                        | Medium              | MINOR                            |
| Acoustic Environment, Vibrations, Radiation | Underwater noise                            | Mobilisation of MODU and support vessels to well site | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 25                    | Low                        | High                | MODERATE                         |

| Environmental & Social Parameters                          | Valued Receptors              | Project Activities / Elements                                               | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |            |
|------------------------------------------------------------|-------------------------------|-----------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|------------|
| Acoustic Environment, Vibrations, Radiation                | Vibrations                    | Mobilisation of MODU to well site – power generation                        | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 22                    | Low                        | Low                 | NEGLIGIBLE                       | NEGLIGIBLE |
| Acoustic Environment, Vibrations, Radiation                | Vibrations                    | Onshore base equipment and utilities installation                           | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 22                    | Low                        | Low                 | NEGLIGIBLE                       | NEGLIGIBLE |
| Acoustic Environment, Vibrations, Radiation                | Vibrations                    | Onshore loading/unloading or staging                                        | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | Low                 | NEGLIGIBLE                       | NEGLIGIBLE |
| Radiation emissions                                        | Electromagnetic radiation     | Mobilisation of MODU to well site – power generation                        | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | Low                 | NEGLIGIBLE                       | NEGLIGIBLE |
| Water resources                                            | Seawater                      | Mobilisation of MODU to well site – power generation                        | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 21                    | Low                        | High                | MODERATE                         | MINOR      |
| Water resources                                            | Surface water and groundwater | Onshore base equipment and utilities installation                           | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | Low                 | NEGLIGIBLE                       | NEGLIGIBLE |
| Water resources                                            | Surface water and groundwater | Onshore loading/unloading or staging                                        | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 1                 | 21                    | Low                        | Low                 | NEGLIGIBLE                       | NEGLIGIBLE |
| Exploration Drilling Operations Phase - Routine Activities |                               |                                                                             |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |            |
| Climate Resilience                                         | Microclimate                  | MODU and support/supply vessel power generation                             | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 1           | 4                | 2             | 1                 | 26                    | Low                        | Medium              | MINOR                            | MINOR      |
| Climate Resilience                                         | Microclimate                  | Operation of onshore facilities, equipment and vehicles                     | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 1           | 4                | 2             | 1                 | 23                    | Low                        | Medium              | MINOR                            | MINOR      |
| Climate Resilience                                         | Microclimate                  | Helicopter transfers between heliport and MODU                              | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 1           | 1                | 2             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       | NEGLIGIBLE |
| Morphological and Topological Characteristics              | Morphology                    | MODU drilling, wellhead and casing installation                             | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       | NEGLIGIBLE |
| Morphological and Topological Characteristics              | Morphology                    | Discharge of water-based fluids and cuttings to seabed (riserless drilling) | -          | 2              | 2           | 4           | 1                | 1                  | 1            | 4           | 4                | 2             | 1                 | 28                    | Low                        | Medium              | MINOR                            | MINOR      |

| Environmental & Social Parameters             | Valued Receptors | Project Activities / Elements                                                                                                                                                            | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|----------------------------------|
| Morphological and Topological Characteristics | Morphology       | Cement discharges at sea bed                                                                                                                                                             | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          | NEGLIGIBLE                       |
| Morphological and Topological Characteristics | Morphology       | Drilling contingency activities (re-spudding, sidetracking, temporary well suspension, emergency disconnect, lost-circulation response, contingent cementing, mechanical pipe severance) | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 23                    | Low        | Medium                     | MINOR               | MINOR                            |
| Morphological and Topological Characteristics | Landscape        | MODU safety exclusion zone and support/supply vessel transfers                                                                                                                           | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 21                    | Low        | Low                        | NEGLIGIBLE          | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Geology          | MODU drilling, wellhead and casing installation                                                                                                                                          | -          | 2              | 1           | 4           | 4                | 4                  | 1            | 4           | 1                | 2             | 1                 | 29                    | Low        | Medium                     | MINOR               | MINOR                            |
| Geological, Tectonic and Soil Characteristics | Geology          | Discharge of water-based fluids and cuttings to seabed (riserless drilling)                                                                                                              | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Geology          | Discharge of water-based fluids and cuttings near sea surface (drilling with riser)                                                                                                      | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Geology          | Cement discharges at seabed                                                                                                                                                              | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Slope stability  | MODU drilling, wellhead and casing installation                                                                                                                                          | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 23                    | Low        | Medium                     | MINOR               | MINOR                            |
| Geological, Tectonic and Soil Characteristics | Slope stability  | Discharge of water-based fluids and cuttings to seabed (riserless drilling)                                                                                                              | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | Medium                     | NEGLIGIBLE          | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Slope stability  | Drilling contingency activities (re-spudding, sidetracking, temporary well suspension, emergency disconnect, lost-circulation response, contingent cementing,                            | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 23                    | Low        | Medium                     | MINOR               | MINOR                            |

| Environmental & Social Parameters             | Valued Receptors         | Project Activities / Elements                                                       | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------------------|--------------------------|-------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
|                                               |                          | mechanical pipe severance)                                                          | -          |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |
| Geological, Tectonic and Soil Characteristics | Tectonics and seismicity | MODU drilling, wellhead and casing installation                                     | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | Medium              | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Soil                     | Logistics base chemicals management                                                 | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 2                | 1             | 1                 | 21                    | Low                        | Low                 | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Soil                     | Logistics base waste management (including HW)                                      | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 2                | 1             | 1                 | 21                    | Low                        | Low                 | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Soil                     | Logistics base drainage (discharge of rainwater run-off)                            | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | Low                 | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Seabed / Sediment        | Drillship dynamic positioning (DP)                                                  | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 4                | 2             | 4                 | 27                    | Low                        | Medium              | MINOR                            |
| Geological, Tectonic and Soil Characteristics | Seabed / Sediment        | MODU drilling, wellhead and casing installation                                     | -          | 2              | 2           | 4           | 3                | 3                  | 2            | 4           | 4                | 4             | 4                 | 38                    | Low                        | Medium              | MINOR                            |
| Geological, Tectonic and Soil Characteristics | Seabed / Sediment        | Discharge of water-based fluids and cuttings to seabed (riserless drilling)         | -          | 4              | 2           | 4           | 2                | 2                  | 2            | 4           | 4                | 3             | 4                 | 41                    | Medium                     | Medium              | MODERATE                         |
| Geological, Tectonic and Soil Characteristics | Seabed / Sediment        | Discharge of water-based fluids and cuttings near sea surface (drilling with riser) | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 4                | 2             | 4                 | 27                    | Low                        | Medium              | MINOR                            |
| Geological, Tectonic and Soil Characteristics | Seabed / Sediment        | Cement discharges at seabed                                                         | -          | 4              | 2           | 4           | 3                | 3                  | 2            | 4           | 1                | 4             | 4                 | 41                    | Medium                     | Medium              | MODERATE                         |
| Geological, Tectonic and Soil Characteristics | Seabed / Sediment        | Cement discharges near sea surface from tank wash out                               | -          | 2              | 1           | 4           | 2                | 2                  | 2            | 4           | 1                | 2             | 4                 | 29                    | Low                        | Medium              | MINOR                            |
| Geological, Tectonic and Soil Characteristics | Seabed / Sediment        | Discharge of food waste from MODU and support/supply vessels                        | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 4                 | 28                    | Low                        | Medium              | MINOR                            |
| Geological, Tectonic and Soil Characteristics | Seabed / Sediment        | ROV Operation                                                                       | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 4                 | 22                    | Low                        | Medium              | MINOR                            |

| Environmental & Social Parameters             | Valued Receptors         | Project Activities / Elements                                                                                                                                                            | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |       |
|-----------------------------------------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|-------|
| Geological, Tectonic and Soil Characteristics | Seabed / Sediment        | Drilling contingency activities (re-spudding, sidetracking, temporary well suspension, emergency disconnect, lost-circulation response, contingent cementing, mechanical pipe severance) | -          | 4              | 2           | 4           | 2                | 2                  | 2            | 4           | 1                | 3             | 4                 | 38                    | Low                        | Medium              | MINOR                            | MINOR |
| Biotic Environment                            | Benthic fauna / habitats | MODU safety exclusion zone and support/supply vessel transfers                                                                                                                           | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 4                 | 25                    | Low                        | Medium              | MINOR                            | MINOR |
|                                               | Benthic fauna / habitats | Drillship dynamic positioning (DP)                                                                                                                                                       | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 4                | 1             | 1                 | 25                    | Low                        | Medium              | MINOR                            | MINOR |
|                                               | Benthic fauna / habitats | MODU drilling, wellhead and casing installation                                                                                                                                          | -          | 8              | 2           | 4           | 1                | 4                  | 2            | 4           | 4                | 4             | 1                 | 52                    | Medium                     | Medium              | MODERATE                         | MINOR |
|                                               | Benthic fauna / habitats | Discharge of water based fluids and cuttings to seabed (riserless drilling)                                                                                                              | -          | 8              | 2           | 4           | 1                | 4                  | 2            | 4           | 4                | 4             | 4                 | 55                    | Medium                     | Medium              | MODERATE                         | MINOR |
|                                               | Benthic fauna / habitats | Discharge of water based fluids and cuttings near sea surface (drilling with riser)                                                                                                      | -          | 1              | 4           | 4           | 1                | 2                  | 2            | 1           | 1                | 2             | 4                 | 28                    | Low                        | Medium              | MINOR                            | MINOR |
|                                               | Benthic fauna / habitats | Cement discharges at sea bed                                                                                                                                                             | -          | 8              | 1           | 4           | 1                | 2                  | 2            | 4           | 4                | 4             | 4                 | 51                    | Medium                     | Medium              | MODERATE                         | MINOR |
|                                               | Benthic fauna / habitats | Cement discharges near sea surface from tank wash out                                                                                                                                    | -          | 2              | 1           | 4           | 1                | 1                  | 2            | 1           | 1                | 2             | 4                 | 24                    | Low                        | Medium              | MINOR                            | MINOR |
|                                               | Benthic fauna / habitats | Pipe dope use during drilling                                                                                                                                                            | -          | 4              | 2           | 4           | 1                | 1                  | 2            | 4           | 4                | 2             | 4                 | 38                    | Low                        | Medium              | MINOR                            | MINOR |
|                                               | Benthic fauna / habitats | Testing of MODU blowout preventer (Discharges)                                                                                                                                           | -          | 4              | 1           | 4           | 1                | 1                  | 2            | 4           | 2                | 2             | 4                 | 34                    | Low                        | Medium              | MINOR                            | MINOR |
|                                               | Benthic fauna / habitats | Discharge of sanitary waste from MODU and support/supply vessels                                                                                                                         | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 4                 | 25                    | Low                        | Medium              | MINOR                            | MINOR |
|                                               | Benthic fauna / habitats | Discharge of food waste from MODU and support/supply vessels                                                                                                                             | -          | 2              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 27                    | Low                        | Medium              | MINOR                            | MINOR |
|                                               | Benthic fauna / habitats | Desalination unit discharges from MODU                                                                                                                                                   | -          | 2              | 1           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 4                 | 26                    | Low                        | Medium              | MINOR                            | MINOR |



| Environmental & Social Parameters | Valued Receptors         | Project Activities / Elements                                                                                            | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
|                                   | Benthic fauna / habitats | Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 4                 | 25                    | Low                        | Medium              | MINOR                            |
|                                   | Benthic fauna / habitats | Uplift and discharge of cooling water from MODU                                                                          | -          | 2              | 1           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 4                 | 26                    | Low                        | Medium              | MINOR                            |
|                                   | Benthic fauna / habitats | Discharge of ballast from MODU and support/supply vessels                                                                | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 4                 | 25                    | Low                        | Medium              | MINOR                            |
|                                   | Benthic fauna / habitats | Support activities (movement of support vessels)                                                                         | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 4                 | 25                    | Low                        | Medium              | MINOR                            |
|                                   | Benthic fauna / habitats | Lighting from MODU                                                                                                       | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | Medium              | NEGLIGIBLE                       |
|                                   | Benthic fauna / habitats | Chemical use and storage                                                                                                 | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 4                 | 19                    | Negligible                 | Medium              | NEGLIGIBLE                       |
|                                   | Benthic fauna / habitats | Radioactive source use and storage (well logging)                                                                        | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 4                 | 19                    | Negligible                 | Medium              | NEGLIGIBLE                       |
|                                   | Benthic fauna / habitats | ROV Operation                                                                                                            | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Marine Mammals           | MODU safety exclusion zone and support/supply vessel transfers (direct spatial disturbance)                              | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
|                                   | Marine Mammals           | MODU safety exclusion zone and support/supply vessel transfers (direct underwater noise disturbance)                     | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
|                                   | Marine Mammals           | MODU safety exclusion zone and support/supply vessel transfers (indirect impacts)                                        | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Marine Mammals           | Drillship dynamic positioning (DP) (direct impacts)                                                                      | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 4                | 1             | 4                 | 28                    | Low                        | High                | MODERATE                         |
|                                   | Marine Mammals           | Drillship dynamic positioning (DP) (indirect impacts)                                                                    | -          | 1              | 2           | 3           | 1                | 1                  | 2            | 1           | 4                | 1             | 1                 | 21                    | Low                        | High                | MODERATE                         |

| Environmental & Social Parameters | Valued Receptors | Project Activities / Elements                                                                          | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|------------------|--------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|----------------------------------|
|                                   | Marine Mammals   | MODU drilling, wellhead and casing installation (direct underwater noise disturbance)                  | -          | 2              | 4           | 4           | 2                | 2                  | 2            | 4           | 4                | 2             | 4                 | 38                    | Low        | High                       | MODERATE            | MINOR                            |
|                                   | Marine Mammals   | MODU drilling, wellhead and casing installation (indirect impacts)                                     | -          | 1              | 2           | 3           | 2                | 1                  | 2            | 1           | 4                | 1             | 1                 | 22                    | Low        | High                       | MODERATE            | MINOR                            |
|                                   | Marine Mammals   | Discharge of water based fluids and cuttings to seabed (riserless drilling) (direct impacts)           | -          | 1              | 2           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 4                 | 26                    | Low        | High                       | MODERATE            | MINOR                            |
|                                   | Marine Mammals   | Discharge of water based fluids and cuttings to seabed (riserless drilling) (indirect impacts)         | -          | 1              | 2           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 4                 | 21                    | Low        | High                       | MODERATE            | MINOR                            |
|                                   | Marine Mammals   | Discharge of water based fluids and cuttings near sea surface (drilling with riser) (direct impacts)   | -          | 4              | 4           | 2           | 2                | 2                  | 2            | 1           | 1                | 1             | 4                 | 35                    | Low        | High                       | MODERATE            | MINOR                            |
|                                   | Marine Mammals   | Discharge of water based fluids and cuttings near sea surface (drilling with riser) (indirect impacts) | -          | 1              | 8           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 4                 | 33                    | Low        | High                       | MODERATE            | MINOR                            |
|                                   | Marine Mammals   | Cement discharges at seabed (direct impacts)                                                           | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 4                 | 24                    | Low        | High                       | MODERATE            | MINOR                            |
|                                   | Marine Mammals   | Cement discharges at seabed (indirect impacts)                                                         | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 4                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Marine Mammals   | Cement discharges near sea surface from tank wash out (direct impacts)                                 | -          | 1              | 2           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 4                 | 26                    | Low        | High                       | MODERATE            | MINOR                            |
|                                   | Marine Mammals   | Cement discharges near sea surface from tank wash out (indirect impacts)                               | -          | 1              | 2           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 4                 | 21                    | Low        | High                       | MODERATE            | MINOR                            |
|                                   | Marine Mammals   | Pipe dope use during drilling (direct impacts)                                                         | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 1                 | 21                    | Low        | High                       | MODERATE            | MINOR                            |
|                                   | Marine Mammals   | Pipe dope use during drilling (indirect impacts)                                                       | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 1           | 1                | 1             | 1                 | 17                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Marine Mammals   | Testing of MODU blowout preventer (discharges) (indirect impacts)                                      | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 1           | 1                | 1             | 1                 | 17                    | Negligible | High                       | MINOR               | MINOR                            |

| Environmental & Social Parameters | Valued Receptors | Project Activities / Elements                                                                                                               | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|----------------------------------|
|                                   | Marine Mammals   | Testing of MODU blowout preventer (discharges) (direct impacts)                                                                             | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 1                 | 21                    | Low        | High                       | MODERATE            | MINOR                            |
|                                   | Marine Mammals   | Discharge of sanitary waste from MODU and support/supply vessels (direct impacts)                                                           | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Marine Mammals   | Discharge of sanitary waste from MODU and support/supply vessels (indirect impacts)                                                         | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Marine Mammals   | Discharge of food waste from MODU and support/supply vessels (direct impacts)                                                               | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Marine Mammals   | Discharge of food waste from MODU and support/supply vessels (indirect impacts)                                                             | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Marine Mammals   | Desalination unit discharges from MODU (direct impacts)                                                                                     | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Marine Mammals   | Desalination unit discharges from MODU (indirect impacts)                                                                                   | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Marine Mammals   | Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels (direct impacts)   | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Marine Mammals   | Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels (indirect impacts) | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Marine Mammals   | Uplift and discharge of cooling water from MODU (direct impacts)                                                                            | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |

| Environmental & Social Parameters | Valued Receptors | Project Activities / Elements                                                   | Nature (S)                                                                      | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|------------------|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
|                                   | Marine Mammals   | Uplift and discharge of cooling water from MODU (indirect impacts)              | -                                                                               | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
|                                   | Marine Mammals   | Discharge of ballast from MODU and support/supply vessels (direct impacts)      | -                                                                               | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Marine Mammals   | Discharge of ballast from MODU and support/supply vessels (indirect impacts)    | -                                                                               | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
|                                   | Marine Mammals   | Vertical seismic profile (VSP) activities (direct underwater noise disturbance) | -                                                                               | 4              | 8           | 4           | 2                | 2                  | 2            | 4           | 2                | 2             | 4                 | 50                    | Medium                     | High                | SEVERE                           |
|                                   | Marine Mammals   | Vertical seismic profile (VSP) activities (indirect impacts)                    | -                                                                               | 4              | 4           | 4           | 2                | 2                  | 2            | 1           | 2                | 2             | 4                 | 39                    | Low                        | High                | MODERATE                         |
|                                   | Marine Mammals   | Support activities (movement of support vessels)                                | Please refer to MODU safety exclusion zone and support /supply vessel transfers |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |
|                                   | Marine Mammals   | Lighting from MODU (direct impacts)                                             | -                                                                               | 1              | 2           | 4           | 1                | 1                  | 1            | 4           | 4                | 1             | 1                 | 24                    | Low                        | High                | MODERATE                         |
|                                   | Marine Mammals   | Lighting from MODU (indirect impacts)                                           | -                                                                               | 1              | 1           | 2           | 1                | 1                  | 1            | 1           | 4                | 1             | 1                 | 17                    | Negligible                 | High                | MINOR                            |
|                                   | Marine Mammals   | Chemical use and storage (direct impacts)*                                      | -                                                                               | 1              | 1           | 2           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 18                    | Negligible                 | High                | MINOR                            |
|                                   | Marine Mammals   | Chemical use and storage (indirect impacts)*                                    | -                                                                               | 1              | 1           | 2           | 1                | 1                  | 2            | 1           | 1                | 1             | 1                 | 15                    | Negligible                 | High                | MINOR                            |
|                                   | Marine Mammals   | Radioactive source use and storage (direct impacts)*                            | -                                                                               | 1              | 1           | 2           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 18                    | Negligible                 | High                | MINOR                            |

| Environmental & Social Parameters | Valued Receptors | Project Activities / Elements                                                                        | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|------------------|------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
|                                   | Marine Mammals   | Radioactive source use and storage (indirect impacts)*                                               | -          | 1              | 1           | 2           | 1                | 1                  | 2            | 1           | 1                | 1             | 1                 | 15                    | Negligible                 | High                | MINOR                            |
|                                   | Marine Mammals   | ROV operation (direct impacts)                                                                       | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Marine Mammals   | ROV operation (indirect impacts)                                                                     | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
|                                   | Marine Mammals   | Logistics base drainage (discharge of rainwater runoff) (direct impacts)                             | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Marine Mammals   | Logistics base drainage (discharge of rainwater runoff) (indirect impacts)                           | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | MODU safety exclusion zone and support/supply vessel transfers (direct spatial disturbance)          | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | MODU safety exclusion zone and support/supply vessel transfers (direct underwater noise disturbance) | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | MODU safety exclusion zone and support/supply vessel transfers (indirect impacts)                    | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | Drillship dynamic positioning (DP) (direct impacts)                                                  | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 4                | 1             | 4                 | 28                    | Low                        | High                | MODERATE                         |
|                                   | Sea Turtles      | Drillship dynamic positioning (DP) (indirect impacts)                                                | -          | 1              | 2           | 3           | 1                | 1                  | 2            | 1           | 4                | 1             | 1                 | 21                    | Low                        | High                | MODERATE                         |
|                                   | Sea Turtles      | MODU drilling, wellhead and casing installation (direct underwater noise disturbance)                | -          | 2              | 4           | 4           | 2                | 2                  | 2            | 4           | 4                | 2             | 4                 | 38                    | Low                        | High                | MODERATE                         |
|                                   | Sea Turtles      | MODU drilling, wellhead and casing installation (indirect impacts)                                   | -          | 1              | 2           | 3           | 2                | 1                  | 2            | 1           | 4                | 1             | 1                 | 22                    | Low                        | High                | MODERATE                         |
|                                   | Sea Turtles      | Discharge of water based fluids and cuttings to                                                      | -          | 2              | 2           | 2           | 2                | 2                  | 2            | 4           | 1                | 1             | 4                 | 28                    | Low                        | High                | MODERATE                         |

| Environmental & Social Parameters | Valued Receptors | Project Activities / Elements                                                                          | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |       |
|-----------------------------------|------------------|--------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|-------|
|                                   |                  | seabed (riserless drilling) (direct impacts)                                                           |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |       |
|                                   | Sea Turtles      | Discharge of water based fluids and cuttings to seabed (riserless drilling) (indirect impacts)         | -          | 1              | 2           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 4                 | 21                    | Low                        | High                | MODERATE                         | MINOR |
|                                   | Sea Turtles      | Discharge of water based fluids and cuttings near sea surface (drilling with riser) (direct impacts)   | -          | 2              | 8           | 2           | 2                | 2                  | 2            | 1           | 1                | 1             | 4                 | 37                    | Low                        | High                | MODERATE                         | MINOR |
|                                   | Sea Turtles      | Discharge of water based fluids and cuttings near sea surface (drilling with riser) (indirect impacts) | -          | 1              | 8           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 4                 | 33                    | Low                        | High                | MODERATE                         | MINOR |
|                                   | Sea Turtles      | Cement discharges at seabed (direct impacts)                                                           | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 4                 | 24                    | Low                        | High                | MODERATE                         | MINOR |
|                                   | Sea Turtles      | Cement discharges at seabed (indirect impacts)                                                         | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 4                 | 19                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Sea Turtles      | Cement discharges near sea surface from tank wash out (direct impacts)                                 | -          | 1              | 2           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 4                 | 26                    | Low                        | High                | MODERATE                         | MINOR |
|                                   | Sea Turtles      | Cement discharges near sea surface from tank wash out (indirect impacts)                               | -          | 1              | 2           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 4                 | 21                    | Low                        | High                | MODERATE                         | MINOR |
|                                   | Sea Turtles      | Pipe dope use during drilling (direct impacts)                                                         | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 1                 | 21                    | Low                        | High                | MODERATE                         | MINOR |
|                                   | Sea Turtles      | Pipe dope use during drilling (indirect impacts)                                                       | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 1           | 1                | 1             | 1                 | 17                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Sea Turtles      | Testing of MODU blowout preventer (discharges) (indirect impacts)                                      | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 1           | 1                | 1             | 1                 | 17                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Sea Turtles      | Testing of MODU blowout preventer (discharges) (direct impacts)                                        | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 1                 | 21                    | Low                        | High                | MODERATE                         | MINOR |
|                                   | Sea Turtles      | Discharge of sanitary waste from MODU and support/supply vessels (direct impacts)                      | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR |
|                                   | Sea Turtles      | Discharge of sanitary waste from MODU and                                                              | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            | MINOR |

| Environmental & Social Parameters | Valued Receptors | Project Activities / Elements                                                                                                               | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
|                                   |                  | support/supply vessels (indirect impacts)                                                                                                   | -          |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |
|                                   | Sea Turtles      | Discharge of food waste from MODU and support/supply vessels (direct impacts)                                                               | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | Discharge of food waste from MODU and support/supply vessels (indirect impacts)                                                             | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | Desalination unit discharges from MODU (direct impacts)                                                                                     | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | Desalination unit discharges from MODU (indirect impacts)                                                                                   | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels (direct impacts)   | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels (indirect impacts) | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | Uplift and discharge of cooling water from MODU (direct impacts)                                                                            | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | Uplift and discharge of cooling water from MODU (indirect impacts)                                                                          | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | Discharge of ballast from MODU and support/supply vessels (direct impacts)                                                                  | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | Discharge of ballast from MODU and support/supply vessels (indirect impacts)                                                                | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |



| Environmental & Social Parameters | Valued Receptors | Project Activities / Elements                                                   | Nature (S)                                                                      | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|------------------|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|----------------------------------|
|                                   | Sea Turtles      | Vertical seismic profile (VSP) activities (direct underwater noise disturbance) | -                                                                               | 4              | 4           | 4           | 2                | 2                  | 2            | 4           | 2                | 2             | 4                 | 42                    | Medium     | High                       | SEVERE              | MODERATE                         |
|                                   | Sea Turtles      | Vertical seismic profile (VSP) activities (indirect impacts)                    | -                                                                               | 4              | 4           | 4           | 2                | 2                  | 2            | 1           | 2                | 2             | 4                 | 39                    | Low        | High                       | MODERATE            | MINOR                            |
|                                   | Sea Turtles      | Support activities (movement of support vessels)                                | Please refer to MODU safety exclusion zone and support /supply vessel transfers |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |                                  |
|                                   | Sea Turtles      | Lighting from MODU (direct impacts)                                             | -                                                                               | 1              | 2           | 4           | 1                | 1                  | 1            | 4           | 4                | 1             | 1                 | 24                    | Low        | High                       | MODERATE            | MINOR                            |
|                                   | Sea Turtles      | Lighting from MODU (indirect impacts)                                           | -                                                                               | 1              | 1           | 2           | 1                | 1                  | 1            | 1           | 4                | 1             | 1                 | 17                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Sea Turtles      | Chemical use and storage (direct impacts)*                                      | -                                                                               | 1              | 1           | 2           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 18                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Sea Turtles      | Chemical use and storage (indirect impacts)*                                    | -                                                                               | 1              | 1           | 2           | 1                | 1                  | 2            | 1           | 1                | 1             | 1                 | 15                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Sea Turtles      | Radioactive source use and storage (direct impacts)*                            | -                                                                               | 1              | 1           | 2           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 18                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Sea Turtles      | Radioactive source use and storage (indirect impacts)*                          | -                                                                               | 1              | 1           | 2           | 1                | 1                  | 2            | 1           | 1                | 1             | 1                 | 15                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Sea Turtles      | ROV operation (direct impacts)                                                  | -                                                                               | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Sea Turtles      | ROV operation (indirect impacts)                                                | -                                                                               | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Sea Turtles      | Logistics base drainage (discharge of rainwater runoff) (direct impacts)        | -                                                                               | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |

| Environmental & Social Parameters | Valued Receptors | Project Activities / Elements                                                                 | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|------------------|-----------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
|                                   | Fish Fauna       | Logistics base drainage (discharge of rainwater runoff) (indirect impacts)                    | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | MODU safety exclusion zone and support/supply vessel transfers (indirect spatial disturbance) | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | MODU safety exclusion zone and support/supply vessel transfers (direct UWN)                   | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | MODU safety exclusion zone and support/supply vessel transfers (Indirect UWN)                 | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | Drillship dynamic positioning (DP) - UWN (direct UWN)                                         | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 4                | 1             | 1                 | 23                    | Low                        | High                | MODERATE                         |
|                                   | Fish Fauna       | MODU drilling, wellhead and casing installation (direct UWN)                                  | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 2                | 1             | 1                 | 21                    | Low                        | High                | MODERATE                         |
|                                   | Fish Fauna       | MODU drilling, wellhead and casing installation (indirect UWN)                                | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 17                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | Discharge of water-based fluids and cuttings to seabed (riserless drilling) (direct)          | -          | 2              | 2           | 3           | 1                | 4                  | 2            | 4           | 2                | 1             | 4                 | 31                    | Low                        | High                | MODERATE                         |
|                                   | Fish Fauna       | Discharge of water-based fluids and cuttings to seabed (riserless drilling) (indirect)        | -          | 2              | 2           | 3           | 2                | 4                  | 2            | 1           | 2                | 3             | 4                 | 31                    | Low                        | High                | MODERATE                         |
|                                   | Fish Fauna       | Discharge of water-based fluids and cuttings near sea surface (drilling with riser) (direct)  | -          | 2              | 2           | 4           | 1                | 4                  | 2            | 4           | 2                | 1             | 4                 | 32                    | Low                        | High                | MODERATE                         |
|                                   | Fish Fauna       | Cement discharges at seabed (direct)                                                          | -          | 2              | 1           | 4           | 2                | 3                  | 2            | 4           | 2                | 2             | 4                 | 31                    | Low                        | High                | MODERATE                         |
|                                   | Fish Fauna       | Cement discharges near sea surface from tank wash out (direct)                                | -          | 2              | 2           | 4           | 2                | 3                  | 2            | 4           | 2                | 1             | 4                 | 32                    | Low                        | High                | MODERATE                         |

| Environmental & Social Parameters | Valued Receptors | Project Activities / Elements                                                                                                     | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
|                                   | Fish Fauna       | Pipe dope use during drilling (direct)                                                                                            | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | Testing of MODU blowout preventer (discharges) (direct)                                                                           | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | Discharge of sanitary waste from MODU and support/supply vessels (direct)                                                         | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | Discharge of food waste from MODU and support/supply vessels (direct)                                                             | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | Desalination unit discharges from MODU (direct)                                                                                   | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels (direct) | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | Uplift and discharge of cooling water from MODU (direct)                                                                          | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | Discharge of ballast from MODU and support/supply vessels (direct)                                                                | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | Vertical seismic profile (VSP) activities (direct UWN)                                                                            | -          | 4              | 4           | 4           | 1                | 1                  | 2            | 4           | 2                | 3             | 1                 | 38                    | Low                        | High                | MODERATE                         |
|                                   | Fish Fauna       | Vertical seismic profile (VSP) activities (indirect UWN)                                                                          | -          | 4              | 4           | 4           | 1                | 1                  | 2            | 1           | 2                | 3             | 1                 | 35                    | Low                        | High                | MODERATE                         |
|                                   | Fish Fauna       | Support activities (movement of support vessels) (direct UWN)                                                                     | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | Support activities (movement of support vessels) (indirect UWN)                                                                   | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |

| Environmental & Social Parameters | Valued Receptors | Project Activities / Elements                                                                                                     | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |          |
|-----------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|----------|
|                                   | Fish Fauna       | Support activities (movement of support vessels) (direct spatial disturbance)                                                     | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            | MINOR    |
|                                   | Fish Fauna       | Lighting from MODU                                                                                                                | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 22                    | Low                        | High                | MODERATE                         | MINOR    |
|                                   | Fish Fauna       | Chemical use and storage                                                                                                          | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR    |
|                                   | Fish Fauna       | Radioactive source use and storage (well logging)                                                                                 | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR    |
|                                   | Fish Fauna       | ROV Operation                                                                                                                     | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            | MINOR    |
|                                   | Fish Fauna       | Logistics base drainage (discharge of rainwater run-off)                                                                          | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            | MINOR    |
|                                   | Avifauna         | MODU safety exclusion zone and support/supply vessel transfers – power generation (collisions)                                    | -          | 2              | 8           | 4           | 2                | 1                  | 2            | 4           | 2                | 3             | 1                 | 41                    | Medium                     | Medium              | MODERATE                         | MINOR    |
|                                   | Avifauna         | MODU safety exclusion zone and support/supply vessel transfers – power generation (increased energy cost/ exhaustion/ starvation) | -          | 2              | 8           | 4           | 2                | 1                  | 2            | 4           | 2                | 3             | 1                 | 41                    | Medium                     | Medium              | MODERATE                         | MINOR    |
|                                   | Avifauna         | MODU safety exclusion zone and support/supply vessel transfers – power generation (resting/ roosting sites)                       | +          | 4              | 8           | 4           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 44                    | Medium                     | Medium              | POSITIVE                         | POSITIVE |
|                                   | Avifauna         | Lighting from MODU (collisions)                                                                                                   | -          | 4              | 8           | 4           | 2                | 1                  | 2            | 4           | 4                | 3             | 1                 | 49                    | Medium                     | Medium              | MODERATE                         | MINOR    |
|                                   | Avifauna         | Lighting from MODU (increased energy cost/ exhaustion/ starvation)                                                                | -          | 4              | 8           | 4           | 2                | 1                  | 2            | 4           | 4                | 2             | 1                 | 48                    | Medium                     | Medium              | MODERATE                         | MINOR    |
|                                   | Avifauna         | Helicopter transfers between heliport and MODU (collisions)                                                                       | -          | 2              | 8           | 4           | 1                | 1                  | 2            | 4           | 2                | 1             | 1                 | 38                    | Low                        | Medium              | MINOR                            | MINOR    |
|                                   | Avifauna         | Support activities (movement of support vessels) (collisions)                                                                     | -          | 2              | 8           | 4           | 2                | 1                  | 2            | 4           | 1                | 3             | 1                 | 40                    | Low                        | Medium              | MINOR                            | MINOR    |
|                                   | Avifauna         | Support activities (movement of support                                                                                           | -          | 2              | 8           | 4           | 2                | 1                  | 2            | 4           | 1                | 2             | 1                 | 39                    | Low                        | Medium              | MINOR                            | MINOR    |

| Environmental & Social Parameters | Valued Receptors | Project Activities / Elements                                                                          | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |          |
|-----------------------------------|------------------|--------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|----------|
|                                   |                  | vessels) (increased energy cost/ exhaustion/ starvation)                                               |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |          |
|                                   | Avifauna         | Support activities (movement of support vessels) (resting/ roosting sites)                             | +          | 2              | 8           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 37                    | Low                        | Medium              | POSITIVE                         | POSITIVE |
|                                   | Planton          | Discharge of water based fluids and cuttings to seabed (riserless drilling) (indirect impacts)         | -          | 1              | 2           | 3           | 2                | 4                  | 2            | 1           | 2                | 1             | 4                 | 26                    | Low                        | High                | MODERATE                         | MINOR    |
|                                   | Planton          | Discharge of water based fluids and cuttings near sea surface (drilling with riser) (direct impacts)   | -          | 2              | 8           | 2           | 2                | 2                  | 2            | 1           | 1                | 1             | 4                 | 37                    | Low                        | High                | MODERATE                         | MINOR    |
|                                   | Planton          | Discharge of water based fluids and cuttings near sea surface (drilling with riser) (indirect impacts) | -          | 1              | 8           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 4                 | 33                    | Low                        | High                | MODERATE                         | MINOR    |
|                                   | Planton          | Cement discharges at sea bed (direct impacts)                                                          | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 4                 | 24                    | Low                        | High                | MODERATE                         | MINOR    |
|                                   | Planton          | Cement discharges at sea bed (indirect impacts)                                                        | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 4                 | 19                    | Negligible                 | High                | MINOR                            | MINOR    |
|                                   | Planton          | Cement discharges near sea surface from tank wash out (direct impacts)                                 | -          | 1              | 2           | 2           | 2                | 2                  | 2            | 4           | 1                | 2             | 4                 | 26                    | Low                        | High                | MODERATE                         | MINOR    |
|                                   | Planton          | Cement discharges near sea surface from tank wash out (indirect impacts)                               | -          | 1              | 2           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 4                 | 21                    | Low                        | High                | MODERATE                         | MINOR    |
|                                   | Planton          | Discharge of sanitary waste from MODU and support/supply vessels (direct impacts)                      | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR    |
|                                   | Planton          | Discharge of sanitary waste from MODU and support/supply vessels (indirect impacts)                    | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            | MINOR    |
|                                   | Planton          | Discharge of food waste from MODU and support/supply vessels (direct impacts)                          | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR    |

| Environmental & Social Parameters | Valued Receptors | Project Activities / Elements                                                                                                               | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|----------------------------------|
|                                   | Planton          | Discharge of food waste from MODU and support/supply vessels (indirect impacts)                                                             | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Planton          | Desalination unit discharges from MODU (direct impacts)                                                                                     | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Planton          | Desalination unit discharges from MODU (indirect impacts)                                                                                   | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Planton          | Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels (direct impacts)   | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Planton          | Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels (indirect impacts) | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Planton          | Uplift and discharge of cooling water from MODU (direct impacts)                                                                            | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Planton          | Uplift and discharge of cooling water from MODU (indirect impacts)                                                                          | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Planton          | Discharge of ballast from MODU and support/supply vessels (direct impacts)                                                                  | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Planton          | Discharge of ballast from MODU and support/supply vessels (indirect impacts)                                                                | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 1                | 1             | 1                 | 16                    | Negligible | High                       | MINOR               | MINOR                            |
|                                   | Zooplankton only | Vertical seismic profile (VSP) activities (direct underwater noise disturbance)                                                             | -          | 4              | 4           | 4           | 2                | 2                  | 2            | 4           | 1                | 2             | 1                 | 38                    | Low        | High                       | MODERATE            | MINOR                            |
|                                   | Planton          | Lighting from MODU                                                                                                                          | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | High                       | MINOR               | MINOR                            |

| Environmental & Social Parameters | Valued Receptors              | Project Activities / Elements                                                                                            | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
|                                   | Protected Areas               | Mobilisation of MODU to well site – power generation                                                                     | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Protected Areas               | MODU safety exclusion zone and support/supply vessel transfers                                                           | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Protected Areas               | Discharge of water based fluids and cuttings near sea surface (drilling with riser)                                      | -          | 1              | 2           | 2           | 2                | 1                  | 2            | 4           | 1                | 2             | 4                 | 25                    | Low                        | High                | MODERATE                         |
|                                   | Protected Areas               | Cement discharges near sea surface from tank wash out                                                                    | -          | 1              | 2           | 2           | 2                | 1                  | 2            | 4           | 1                | 2             | 4                 | 25                    | Low                        | High                | MODERATE                         |
|                                   | Protected Areas               | Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels | -          | 1              | 1           | 3           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Protected Areas               | Discharge of ballast from MODU and support/supply vessels                                                                | -          | 1              | 2           | 2           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
|                                   | Protected Areas               | Vertical seismic profile (VSP) activities                                                                                | -          | 2              | 4           | 4           | 2                | 2                  | 2            | 4           | 1                | 2             | 1                 | 32                    | Low                        | High                | MODERATE                         |
|                                   | Protected Areas               | Support activities (movement of support vessels)                                                                         | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Protected Areas               | Mobilisation of MODU to well site – power generation                                                                     | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Other important natural areas | As per marine mammals, sea turtles and fish fauna                                                                        |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |
| Anthropogenic Environment         | Spatial Planning and Land Use | Operation of facilities, equipment and vehicles                                                                          | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 4                | 1             | 1                 | 23                    | Low                        | Medium              | MINOR                            |
| Anthropogenic Environment         | Spatial Planning and Land Use | Logistics base operation - disruption to port activities                                                                 | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 4                | 1             | 1                 | 23                    | Low                        | Medium              | MINOR                            |
| Anthropogenic Environment         | Maritime uses                 | MODU safety exclusion zone and support/supply vessel transfers                                                           | -          | 2              | 2           | 4           | 1                | 1                  | 1            | 4           | 4                | 1             | 1                 | 27                    | Low                        | High                | MODERATE                         |
| Anthropogenic Environment         | Maritime uses                 | Drillship dynamic positioning (DP)                                                                                       | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 17                    | Negligible                 | High                | MINOR                            |



| Environmental & Social Parameters | Valued Receptors                                         | Project Activities / Elements                                                       | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
| Anthropogenic Environment         | Maritime uses                                            | MODU drilling, wellhead and casing installation                                     | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 17                    | Negligible                 | High                | MINOR                            |
| Anthropogenic Environment         | Maritime uses                                            | Discharge of water based fluids and cuttings to seabed (riserless drilling)         | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 17                    | Negligible                 | High                | MINOR                            |
| Anthropogenic Environment         | Maritime uses                                            | Discharge of water based fluids and cuttings near sea surface (drilling with riser) | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 17                    | Negligible                 | High                | MINOR                            |
| Anthropogenic Environment         | Maritime uses                                            | MODU and support/supply vessel power generation                                     | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 17                    | Negligible                 | High                | MINOR                            |
| Anthropogenic Environment         | Maritime uses                                            | Vertical seismic profile (VSP) activities                                           | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Anthropogenic Environment         | Maritime uses                                            | Support activities (movement of support vessels)                                    | -          | 2              | 2           | 4           | 1                | 1                  | 1            | 4           | 4                | 1             | 1                 | 27                    | Low                        | High                | MODERATE                         |
| Anthropogenic Environment         | Maritime uses                                            | Lighting from MODU                                                                  | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 4                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Anthropogenic Environment         | Maritime uses                                            | ROV Operation                                                                       | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Anthropogenic Environment         | Maritime uses                                            | Operation of facilities, equipment and vehicles                                     | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 2                | 1             | 1                 | 18                    | Negligible                 | High                | MINOR                            |
| Anthropogenic Environment         | Maritime uses                                            | Logistics base operation - disruption to port activities                            | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 2                | 1             | 1                 | 18                    | Negligible                 | High                | MINOR                            |
| Anthropogenic Environment         | Structure and Functions of the Anthropogenic Environment |                                                                                     |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |
| Anthropogenic Environment         | Cultural Heritage                                        | MODU safety exclusion zone and support/supply vessel transfers                      | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 4                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Anthropogenic Environment         | Cultural Heritage                                        | MODU drilling, wellhead and casing installation                                     | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Anthropogenic Environment         | Cultural Heritage                                        | Discharge of WBM fluids/cuttings to seabed                                          | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 17                    | Negligible                 | High                | MINOR                            |
| Anthropogenic Environment         | Cultural Heritage                                        | Cement discharges at seabed                                                         | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Anthropogenic Environment         | Cultural Heritage                                        | ROV operation                                                                       | +          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 22                    | Low                        | High                | POSITIVE                         |
| Anthropogenic Environment         | Cultural Heritage                                        | Drilling contingency activities (including re-                                      | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |

| Environmental & Social Parameters | Valued Receptors    | Project Activities / Elements                                                                                                                           | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |       |
|-----------------------------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|-------|
|                                   |                     | spudding, sidetracking, temporary well suspension, emergency disconnect, lost-circulation response, contingent cementing and mechanical pipe severance) |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |       |
| Socio-economic environment        | Economic activities | MODU safety exclusion zone and support/supply vessel transfers                                                                                          | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR |
| Socio-economic environment        | Economic activities | MODU drilling, wellhead and casing installation                                                                                                         | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR |
| Socio-economic environment        | Economic activities | Discharge of WBM fluids/cuttings to seabed                                                                                                              | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR |
| Socio-economic environment        | Economic activities | Discharge of WBM fluids/cuttings near sea surface                                                                                                       | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR |
| Socio-economic environment        | Economic activities | Cement discharges at seabed                                                                                                                             | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR |
| Socio-economic environment        | Economic activities | Cement discharges near sea surface (tank wash out)                                                                                                      | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR |
| Socio-economic environment        | Economic activities | Pipe dope use during drilling                                                                                                                           | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR |
| Socio-economic environment        | Economic activities | Testing of MODU blowout preventer                                                                                                                       | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR |
| Socio-economic environment        | Economic activities | Discharge of sanitary waste (MODU/vessels)                                                                                                              | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR |
| Socio-economic environment        | Economic activities | Discharge of food waste (MODU/vessels)                                                                                                                  | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR |
| Socio-economic environment        | Economic activities | Desalination unit discharges from MODU                                                                                                                  | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR |
| Socio-economic environment        | Economic activities | Discharge of drainage water (deck/fire/bilge/slop)                                                                                                      | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR |
| Socio-economic environment        | Economic activities | Uplift and discharge of cooling water from MODU                                                                                                         | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR |
| Socio-economic environment        | Economic activities | Discharge of ballast (MODU/vessels)                                                                                                                     | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            | MINOR |

| Environmental & Social Parameters | Valued Receptors    | Project Activities / Elements                                                                                                                                                                         | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
| Socio-economic environment        | Economic activities | MODU and support/supply vessel power generation                                                                                                                                                       | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Economic activities | Vertical seismic profile (VSP) activities                                                                                                                                                             | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 17                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Economic activities | Support activities (movement of support vessels)                                                                                                                                                      | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Economic activities | Drilling contingency activities (including re-spudding, sidetracking, temporary well suspension, emergency disconnect, lost-circulation response, contingent cementing and mechanical pipe severance) | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 18                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Economic activities | Operation of facilities, equipment and vehicles                                                                                                                                                       | +          | 2              | 2           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 22                    | Low                        | High                | POSITIVE                         |
| Socio-economic environment        | Economic activities | Logistics base operation – disruption to port activities                                                                                                                                              | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 17                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Economic activities | Helicopter transfers between heliport and MODU                                                                                                                                                        | +          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 1                 | 17                    | Negligible                 | High                | POSITIVE                         |
| Socio-economic environment        | Community H&S       | MODU safety exclusion zone and support/supply vessel transfers                                                                                                                                        | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 1           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S       | Pipe dope use during drilling                                                                                                                                                                         | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S       | Testing of MODU blowout preventer                                                                                                                                                                     | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S       | MODU and support/supply vessel power generation                                                                                                                                                       | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 18                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S       | Vertical seismic profile (VSP) activities                                                                                                                                                             | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S       | Support activities (movement of support vessels)                                                                                                                                                      | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 18                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S       | Lighting from MODU                                                                                                                                                                                    | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S       | Chemical use and storage                                                                                                                                                                              | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |

| Environmental & Social Parameters | Valued Receptors               | Project Activities / Elements                                                                                                 | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
| Socio-economic environment        | Community H&S                  | Radioactive source use and storage (well logging)                                                                             | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S                  | Drilling contingency activities (re-spud, sidetrack, suspension, EDS, lost-circulation, contingent cementing, pipe severance) | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S                  | Operation of facilities, equipment and vehicles                                                                               | +          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 1                 | 20                    | Negligible                 | High                | POSITIVE                         |
| Socio-economic environment        | Community H&S                  | Logistics base chemicals management                                                                                           | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 4                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S                  | Logistics base waste management (incl. HW)                                                                                    | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 4                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S                  | Logistics base operation – disruption to port activities                                                                      | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 4                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S                  | Onshore storage and transport of radioactive sealed sources                                                                   | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S                  | Helicopter transfers between heliport and MODU                                                                                | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 4                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Social Infrastructure             | Social Infrastructure          |                                                                                                                               |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |
| Technical Infrastructure          | Maritime Infrastructure        | MODU safety exclusion zone and support/supply vessel transfers                                                                | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 4                | 2             | 1                 | 26                    | Low                        | Low                 | NEGLIGIBLE                       |
| Technical Infrastructure          | Maritime Infrastructure        | Support activities (movement of support vessels)                                                                              | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 1                 | 23                    | Low                        | High                | MODERATE                         |
| Technical Infrastructure          | Maritime Infrastructure        | Logistics base operation - disruption to port activities                                                                      | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 4                | 2             | 1                 | 29                    | Low                        | High                | MODERATE                         |
| Technical Infrastructure          | Other transport infrastructure | Operation of facilities, equipment and vehicles                                                                               | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 4                | 1             | 1                 | 25                    | Low                        | Medium              | MINOR                            |
| Technical Infrastructure          | Other transport infrastructure | Logistics base operation - disruption to port activities                                                                      | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 4                | 1             | 1                 | 28                    | Low                        | Medium              | MINOR                            |
| Technical Infrastructure          | Other transport infrastructure | Helicopter transfers between heliport and MODU                                                                                | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 2                | 1             | 1                 | 23                    | Low                        | Medium              | MINOR                            |

| Environmental & Social Parameters | Valued Receptors                            | Project Activities / Elements                                  | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|---------------------------------------------|----------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
| Technical Infrastructure          | Technical Infrastructure (Energy, Telecoms) | Logistics base operation - disruption to port activities       | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 4                | 1             | 1                 | 25                    | Low                        | Low                 | NEGLIGIBLE                       |
| Technical Infrastructure          | Technical Infrastructure (Environmental)    | Logistics base waste management (including HW)                 | -          | 2              | 4           | 4           | 1                | 1                  | 2            | 4           | 2                | 2             | 1                 | 31                    | Low                        | Medium              | MINOR                            |
| Atmospheric Environment           | Air quality                                 | MODU and support/supply vessel power generation                | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 4                | 2             | 1                 | 29                    | Low                        | Medium              | MINOR                            |
| Atmospheric Environment           | Air quality                                 | Operation of onshore facilities, equipment and vehicles        | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       |
| Atmospheric Environment           | Air quality                                 | Helicopter transfers between heliport and MODU                 | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 22                    | Low                        | Medium              | MINOR                            |
| Acoustic Environment, Vibrations  | Airborne noise                              | Drillship dynamic positioning (DP)                             | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 22                    | Low                        | Medium              | MINOR                            |
| Acoustic Environment, Vibrations  | Airborne noise                              | MODU drilling, wellhead and casing installation                | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 4                | 1             | 1                 | 25                    | Low                        | Medium              | MINOR                            |
| Acoustic Environment, Vibrations  | Airborne noise                              | MODU and support/supply vessel power generation                | -          | 2              | 2           | 4           | 1                | 1                  | 1            | 4           | 4                | 1             | 1                 | 27                    | Low                        | Medium              | MINOR                            |
| Acoustic Environment, Vibrations  | Airborne noise                              | Operation of onshore facilities, equipment and vehicles        | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       |
| Acoustic Environment, Vibrations  | Airborne noise                              | Helicopter transfers between heliport and MODU                 | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 25                    | Low                        | Medium              | MINOR                            |
| Acoustic Environment, Vibrations  | Underwater noise                            | MODU safety exclusion zone and support/supply vessel transfers | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 25                    | Low                        | High                | MODERATE                         |
| Acoustic Environment, Vibrations  | Underwater noise                            | Drillship dynamic positioning (DP)                             | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 22                    | Low                        | High                | MODERATE                         |
| Acoustic Environment, Vibrations  | Underwater noise                            | MODU drilling, wellhead and casing installation                | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 4                | 1             | 1                 | 25                    | Low                        | High                | MODERATE                         |
| Acoustic Environment, Vibrations  | Underwater noise                            | MODU and support/supply vessel power generation                | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 4                | 1             | 1                 | 25                    | Low                        | High                | MODERATE                         |

| Environmental & Social Parameters | Valued Receptors          | Project Activities / Elements                                                                                                                                                            | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|----------------------------------|
| Acoustic Environment, Vibrations  | Underwater noise          | Vertical seismic profile (VSP) activities                                                                                                                                                | -          | 4              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 30                    | Low        | High                       | MODERATE            | MINOR                            |
| Acoustic Environment, Vibrations  | Underwater noise          | Drilling contingency activities (re-spudding, sidetracking, temporary well suspension, emergency disconnect, lost-circulation response, contingent cementing, mechanical pipe severance) | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 23                    | Low        | High                       | MODERATE            | MINOR                            |
| Acoustic Environment, Vibrations  | Underwater noise          | Support activities (movement of support vessels)                                                                                                                                         | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 25                    | Low        | High                       | MODERATE            | MINOR                            |
| Acoustic Environment, Vibrations  | Vibrations                | Drillship dynamic positioning (DP)                                                                                                                                                       | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 22                    | Low        | Low                        | NEGLIGIBLE          | NEGLIGIBLE                       |
| Acoustic Environment, Vibrations  | Vibrations                | MODU drilling, wellhead and casing installation                                                                                                                                          | -          | 4              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 28                    | Low        | Low                        | NEGLIGIBLE          | NEGLIGIBLE                       |
| Acoustic Environment, Vibrations  | Vibrations                | MODU and support/supply vessel power generation                                                                                                                                          | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 22                    | Low        | Low                        | NEGLIGIBLE          | NEGLIGIBLE                       |
| Acoustic Environment, Vibrations  | Vibrations                | Vertical seismic profile (VSP) activities                                                                                                                                                | -          | 4              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 30                    | Low        | Low                        | NEGLIGIBLE          | NEGLIGIBLE                       |
| Acoustic Environment, Vibrations  | Vibrations                | Drilling contingency activities (re-spudding, sidetracking, temporary well suspension, emergency disconnect, lost-circulation response, contingent cementing, mechanical pipe severance) | -          | 4              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 28                    | Low        | Low                        | NEGLIGIBLE          | NEGLIGIBLE                       |
| Acoustic Environment, Vibrations  | Vibrations                | Operation of onshore facilities, equipment and vehicles                                                                                                                                  | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible | Low                        | NEGLIGIBLE          | NEGLIGIBLE                       |
| Radiation emissions               | Electromagnetic radiation | Radioactive source use and storage (well logging)                                                                                                                                        | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Low                        | NEGLIGIBLE          | NEGLIGIBLE                       |

| Environmental & Social Parameters | Valued Receptors          | Project Activities / Elements                                                                                            | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
| Radiation emissions               | Electromagnetic radiation | Onshore storage and transport of radioactive sealed sources                                                              | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | Low                 | NEGLIGIBLE                       |
| Water resources                   | Seawater                  | Drillship dynamic positioning (DP)                                                                                       | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 1           | 1                | 1             | 4                 | 20                    | Negligible                 | High                | MINOR                            |
| Water resources                   | Seawater                  | MODU drilling, wellhead and casing installation                                                                          | -          | 2              | 1           | 4           | 1                | 1                  | 2            | 1           | 4                | 2             | 4                 | 27                    | Low                        | High                | MODERATE                         |
| Water resources                   | Seawater                  | Discharge of water-based fluids and cuttings to seabed (riserless drilling)                                              | -          | 4              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 33                    | Low                        | High                | MODERATE                         |
| Water resources                   | Seawater                  | Discharge of water-based fluids and cuttings near sea surface (drilling with riser)                                      | -          | 4              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 35                    | Low                        | High                | MODERATE                         |
| Water resources                   | Seawater                  | Cement discharges at seabed                                                                                              | -          | 4              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 33                    | Low                        | High                | MODERATE                         |
| Water resources                   | Seawater                  | Cement discharges near sea surface from tank wash out                                                                    | -          | 4              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 35                    | Low                        | High                | MODERATE                         |
| Water resources                   | Seawater                  | Pipe dope use during drilling                                                                                            | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 24                    | Low                        | High                | MODERATE                         |
| Water resources                   | Seawater                  | Testing of MODU blowout preventer (Discharges)                                                                           | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 24                    | Low                        | High                | MODERATE                         |
| Water resources                   | Seawater                  | Discharge of sanitary waste from MODU and support/supply vessels                                                         | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 29                    | Low                        | High                | MODERATE                         |
| Water resources                   | Seawater                  | Discharge of food waste from MODU and support/supply vessels                                                             | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 29                    | Low                        | High                | MODERATE                         |
| Water resources                   | Seawater                  | Desalination unit discharges from MODU                                                                                   | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 26                    | Low                        | High                | MODERATE                         |
| Water resources                   | Seawater                  | Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels | -          | 2              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 29                    | Low                        | High                | MODERATE                         |
| Water resources                   | Seawater                  | Uplift and discharge of cooling water from MODU                                                                          | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 26                    | Low                        | High                | MODERATE                         |
| Water resources                   | Seawater                  | Discharge of ballast from MODU and support/supply vessels                                                                | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 26                    | Low                        | High                | MODERATE                         |



| Environmental & Social Parameters             | Valued Receptors              | Project Activities / Elements                            | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) |            | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------------------|-------------------------------|----------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|------------|----------------------------|---------------------|----------------------------------|
| Water resources                               | Seawater                      | Support activities (movement of support vessels)         | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 2                | 1             | 4                 | 26                    | Low        | High                       | MODERATE            | MINOR                            |
| Water resources                               | Seawater                      | Drilling contingency activities                          | -          | 4              | 2           | 4           | 2                | 2                  | 2            | 4           | 1                | 3             | 4                 | 38                    | Low        | High                       | MODERATE            | MINOR                            |
| Water resources                               | Surface water and groundwater | Logistics base chemicals management                      | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 2                | 1             | 1                 | 21                    | Low        | Low                        | NEGLIGIBLE          | NEGLIGIBLE                       |
| Water resources                               | Surface water and groundwater | Logistics base waste management (including HW)           | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 2                | 1             | 1                 | 21                    | Low        | Low                        | NEGLIGIBLE          | NEGLIGIBLE                       |
| Water resources                               | Surface water and groundwater | Logistics base drainage (discharge of rainwater run-off) | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible | Low                        | NEGLIGIBLE          | NEGLIGIBLE                       |
| Demobilisation and Abandonment Phase          |                               |                                                          |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |            |                            |                     |                                  |
| Climate Resilience                            | Microclimate                  | MODU circulation and surface handling operations         | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 1           | 1                | 2             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          | NEGLIGIBLE                       |
| Morphological and Topological Characteristics | Morphology                    | Cement plug installation and abandonment                 | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          | NEGLIGIBLE                       |
| Morphological and Topological Characteristics | Landscape                     | Removal of temporary subsea infrastructure               | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Low                        | NEGLIGIBLE          | NEGLIGIBLE                       |
| Morphological and Topological Characteristics | Landscape                     | Dismantling and removal from the port area               | +          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 4                | 2             | 1                 | 26                    | Low        | Low                        | POSITIVE            | POSITIVE                         |
| Morphological and Topological Characteristics | Landscape                     | Removal of helicopter hangar                             | +          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 4                | 2             | 1                 | 26                    | Low        | Low                        | POSITIVE            | POSITIVE                         |
| Geological, Tectonic and Soil Characteristics | Geology                       | Cement plug installation and abandonment                 | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Geology                       | Removal of temporary subsea infrastructure               | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Slope stability               | Cement plug installation and abandonment                 | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible | Medium                     | NEGLIGIBLE          | NEGLIGIBLE                       |

| Environmental & Social Parameters             | Valued Receptors         | Project Activities / Elements                               | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------------------|--------------------------|-------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
| Geological, Tectonic and Soil Characteristics | Slope stability          | Removal of temporary subsea infrastructure                  | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Tectonics and seismicity | Cement plug installation and abandonment                    | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | Medium              | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Soil                     | Waste contractor collections (all wastes)                   | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | Low                 | NEGLIGIBLE                       |
| Geological, Tectonic and Soil Characteristics | Seabed / Sediment        | Cement plug installation and abandonment                    | -          | 2              | 1           | 4           | 3                | 3                  | 2            | 4           | 4                | 4             | 1                 | 33                    | Low                        | Medium              | MINOR                            |
| Geological, Tectonic and Soil Characteristics | Seabed / Sediment        | MODU circulation and surface handling operations            | -          | 4              | 2           | 4           | 2                | 2                  | 2            | 4           | 4                | 3             | 4                 | 41                    | Medium                     | Medium              | MODERATE                         |
| Geological, Tectonic and Soil Characteristics | Seabed / Sediment        | Removal of temporary subsea infrastructure                  | +          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 4                | 1             | 1                 | 25                    | Low                        | Medium              | MINOR                            |
| Geological, Tectonic and Soil Characteristics | Seabed / Sediment        | ROV post operation seabed survey                            | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 4                 | 22                    | Low                        | Medium              | MINOR                            |
| Biotic Environment                            | Benthic fauna / habitats | MODU circulation and surface handling operations            | -          | 2              | 2           | 4           | 2                | 2                  | 2            | 4           | 4                | 2             | 4                 | 34                    | Low                        | Medium              | MINOR                            |
|                                               | Benthic fauna / habitats | Removal of temporary subsea infrastructure                  | +          | 2              | 2           | 4           | 2                | 2                  | 2            | 4           | 1                | 4             | 4                 | 33                    | Low                        | Medium              | POSITIVE                         |
|                                               | Benthic fauna / habitats | Removal of temporary subsea infrastructure                  | -          | 2              | 2           | 4           | 2                | 2                  | 2            | 4           | 1                | 4             | 4                 | 33                    | Low                        | Medium              | MINOR                            |
|                                               | Benthic fauna / habitats | Cement plug installation and abandonment                    | -          | 2              | 2           | 4           | 4                | 2                  | 2            | 4           | 1                | 4             | 4                 | 35                    | Low                        | Medium              | MINOR                            |
|                                               | Benthic fauna / habitats | ROV post operation seabed survey                            | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | Medium              | NEGLIGIBLE                       |
|                                               | Marine Mammals           | Cement plug installation and abandonment (direct impacts)   | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
|                                               | Marine Mammals           | Cement plug installation and abandonment (indirect impacts) | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 1           | 1                | 1             | 1                 | 17                    | Negligible                 | High                | MINOR                            |
|                                               | Marine Mammals           | MODU circulation and surface handling operations (direct    | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 4                 | 20                    | Negligible                 | High                | MINOR                            |

| Environmental & Social Parameters | Valued Receptors | Project Activities / Elements                                                          | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|------------------|----------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
|                                   |                  | underwater noise disturbance)                                                          | -          |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |
|                                   | Marine Mammals   | MODU circulation and surface handling operations (direct spatial disturbance)          | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 2                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
|                                   | Marine Mammals   | MODU circulation and surface handling operations (direct discharges impacts)           | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Marine Mammals   | MODU circulation and surface handling operations (indirect impacts)                    | -          | 1              | 1           | 3           | 2                | 1                  | 2            | 1           | 4                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
|                                   | Marine Mammals   | Removal of temporary subsea infrastructure (direct impacts)                            | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Marine Mammals   | Removal of temporary subsea infrastructure (indirect impacts)                          | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 4                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Marine Mammals   | ROV post operation seabed survey (direct impacts)                                      | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Marine Mammals   | ROV post operation seabed survey (indirect impacts)                                    | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | Cement plug installation and abandonment (direct impacts)                              | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | Cement plug installation and abandonment (indirect impacts)                            | -          | 1              | 1           | 2           | 2                | 2                  | 2            | 1           | 1                | 1             | 1                 | 17                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | MODU circulation and surface handling operations (direct underwater noise disturbance) | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 2                | 1             | 4                 | 20                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | MODU circulation and surface handling operations (direct spatial disturbance)          | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 2                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |

| Environmental & Social Parameters | Valued Receptors | Project Activities / Elements                                                   | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|------------------|---------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
|                                   | Sea Turtles      | MODU circulation and surface handling operations (direct discharges impacts)    | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | MODU circulation and surface handling operations (indirect impacts)             | -          | 1              | 1           | 3           | 2                | 1                  | 2            | 1           | 4                | 1             | 1                 | 20                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | Removal of temporary subsea infrastructure (direct impacts)                     | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | Removal of temporary subsea infrastructure (indirect impacts)                   | -          | 1              | 1           | 2           | 2                | 1                  | 2            | 1           | 4                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | ROV post operation seabed survey (direct impacts)                               | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Sea Turtles      | ROV post operation seabed survey (indirect impacts)                             | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | Cement plug installation and abandonment                                        | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | MODU circulation and surface handling operations (direct - UWN)                 | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | MODU circulation and surface handling operations (direct - Spatial disturbance) | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | MODU circulation and surface handling operations (direct - Discharge)           | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | MODU circulation and surface handling operations (indirect)                     | -          | 1              | 1           | 3           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 15                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | Removal of temporary subsea infrastructure                                      | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
|                                   | Fish Fauna       | ROV post operation seabed survey                                                | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |

| Environmental & Social Parameters | Valued Receptors                                         | Project Activities / Elements                                                                    | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|----------------------------------------------------------|--------------------------------------------------------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
|                                   | Avifauna                                                 | MODU circulation and surface handling operations (collisions)                                    | -          | 2              | 8           | 4           | 2                | 1                  | 2            | 4           | 1                | 3             | 1                 | 40                    | Low                        | Medium              | MINOR                            |
|                                   | Avifauna                                                 | MODU circulation and surface handling operations (increased energy cost/ exhaustion/ starvation) | -          | 2              | 8           | 4           | 2                | 1                  | 2            | 4           | 1                | 3             | 1                 | 40                    | Low                        | Medium              | MINOR                            |
|                                   | Avifauna                                                 | MODU circulation and surface handling operations (resting/ roosting sites)                       | +          | 2              | 8           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 37                    | Low                        | Medium              | POSITIVE                         |
|                                   | Other important natural areas                            | As per marine mammals, sea turtles and fish fauna                                                |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |
| Anthropogenic Environment         | Spatial Planning and Land Use                            | Dismantling and removal from the port area                                                       | +          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 4                | 2             | 1                 | 26                    | Low                        | Medium              | POSITIVE                         |
| Anthropogenic Environment         | Spatial Planning and Land Use                            | Removal of helicopter hangar                                                                     | +          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 4                | 2             | 1                 | 26                    | Low                        | Medium              | POSITIVE                         |
| Anthropogenic Environment         | Maritime uses                                            | Cement plug installation and abandonment                                                         | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Anthropogenic Environment         | Maritime uses                                            | MODU circulation and surface handling operations                                                 | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Anthropogenic Environment         | Maritime uses                                            | Removal of temporary subsea infrastructure                                                       | +          | 2              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 25                    | Low                        | High                | POSITIVE                         |
| Anthropogenic Environment         | Maritime uses                                            | Dismantling and removal from the port area                                                       | +          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 4                | 2             | 1                 | 26                    | Low                        | High                | POSITIVE                         |
| Anthropogenic Environment         | Structure and Functions of the Anthropogenic Environment |                                                                                                  |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |
| Anthropogenic Environment         | Cultural Heritage                                        | ROV post-operation seabed survey                                                                 | +          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 22                    | Low                        | High                | POSITIVE                         |
| Socio-economic environment        | Economic activities                                      | Dismantling and removal from the port area                                                       | +          | 2              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 2             | 1                 | 20                    | Negligible                 | High                | POSITIVE                         |
| Socio-economic environment        | Economic activities                                      | Waste contractor collections (all wastes)                                                        | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Economic activities                                      | Removal of helicopter hangar                                                                     | +          | 2              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 2             | 1                 | 20                    | Negligible                 | High                | POSITIVE                         |
| Socio-economic environment        | Community H&S                                            | Dismantling and removal from the port area                                                       | +          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 2             | 1                 | 17                    | Negligible                 | High                | MINOR                            |

| Environmental & Social Parameters | Valued Receptors                            | Project Activities / Elements                    | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|---------------------------------------------|--------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
| Socio-economic environment        | Community H&S                               | Waste contractor collections (all wastes)        | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 1             | 1                 | 16                    | Negligible                 | High                | MINOR                            |
| Socio-economic environment        | Community H&S                               | Removal of helicopter hangar                     | +          | 1              | 1           | 4           | 1                | 1                  | 1            | 1           | 1                | 2             | 1                 | 17                    | Negligible                 | High                | MINOR                            |
| Social Infrastructure             | Social Infrastructure                       |                                                  |            |                |             |             |                  |                    |              |             |                  |               |                   |                       |                            |                     |                                  |
| Technical Infrastructure          | Maritime Infrastructure                     | Removal of temporary subsea infrastructure       | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 21                    | Low                        | High                | MODERATE                         |
| Technical Infrastructure          | Maritime Infrastructure                     | Dismantling and removal from the port area       | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 21                    | Low                        | High                | MODERATE                         |
| Technical Infrastructure          | Other transport infrastructure              | Dismantling and removal from the port area       | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 21                    | Low                        | Medium              | MINOR                            |
| Technical Infrastructure          | Other transport infrastructure              | Waste contractor collections (all wastes)        | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 21                    | Low                        | Medium              | MINOR                            |
| Technical Infrastructure          | Technical Infrastructure (Energy, Telecoms) | Dismantling and removal from the port area       | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       |
| Technical Infrastructure          | Technical Infrastructure (Environmental)    | Waste contractor collections (all wastes)        | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 2             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       |
| Atmospheric Environment           | Air quality                                 | MODU circulation and surface handling operations | -          | 1              | 2           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 1                 | 23                    | Low                        | Medium              | MINOR                            |
| Acoustic Environment, Vibrations  | Airborne noise                              | MODU circulation and surface handling operations | -          | 1              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 21                    | Low                        | Medium              | MINOR                            |
| Acoustic Environment, Vibrations  | Airborne noise                              | Dismantling and removal from the port area       | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 1             | 1                 | 20                    | Negligible                 | Medium              | NEGLIGIBLE                       |
| Acoustic Environment, Vibrations  | Underwater noise                            | Cement plug installation and abandonment         | -          | 2              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 24                    | Low                        | High                | MODERATE                         |
| Acoustic Environment, Vibrations  | Underwater noise                            | MODU circulation and surface handling operations | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | High                | MINOR                            |
| Acoustic Environment, Vibrations  | Underwater noise                            | Removal of temporary subsea infrastructure       | -          | 2              | 2           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 24                    | Low                        | High                | MODERATE                         |
| Acoustic Environment, Vibrations  | Vibrations                                  | MODU circulation and surface handling operations | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 22                    | Low                        | Low                 | NEGLIGIBLE                       |

| Environmental & Social Parameters | Valued Receptors              | Project Activities / Elements                    | Nature (S) | Intensity (IN) | Extent (EX) | Moment (MO) | Persistence (PE) | Reversibility (RV) | Synergy (SI) | Effect (EF) | Periodicity (PR) | Recovery (MC) | Accumulation (AC) | Impact Magnitude (Im) | Valued Receptor Assessment | Impact Significance | Final Residual Impact Evaluation |
|-----------------------------------|-------------------------------|--------------------------------------------------|------------|----------------|-------------|-------------|------------------|--------------------|--------------|-------------|------------------|---------------|-------------------|-----------------------|----------------------------|---------------------|----------------------------------|
| Acoustic Environment, Vibrations  | Vibrations                    | Dismantling and removal from the port area       | -          | 2              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 22                    | Low                        | Low                 | NEGLIGIBLE                       |
| Radiation emissions               | Electromagnetic radiation     | MODU circulation and surface handling operations | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | Low                 | NEGLIGIBLE                       |
| Water resources                   | Seawater                      | MODU circulation and surface handling operations | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 24                    | Low                        | High                | MODERATE                         |
| Water resources                   | Seawater                      | Removal of temporary subsea infrastructure       | -          | 1              | 1           | 4           | 1                | 1                  | 2            | 4           | 1                | 2             | 4                 | 24                    | Low                        | High                | MODERATE                         |
| Water resources                   | Surface water and groundwater | Waste contractor collections (all wastes)        | -          | 1              | 1           | 4           | 1                | 1                  | 1            | 4           | 1                | 1             | 1                 | 19                    | Negligible                 | Low                 | NEGLIGIBLE                       |



## 10.2 Assessment of impacts deriving from the vulnerability of the project to risks of major accidents and/or disasters

The purpose of this section is to present and document the information required to support the analysis of potential impacts arising from the vulnerability of the Project to risks of major accidents or disasters, as provided for under Article 2 of JMD 5688/12-03-2018 (GG 988/B/21-03-2018), “Amendment of the annexes to Law 4014/2011 (A’ 209), pursuant to Article 36A of that Law, in compliance with Directive 2014/52/EU”, and Article 3(3) of JMD 1915/2018 (GG 304/B/2-2-2018), “Amendment of Joint Ministerial Decision 48963/2012 (B’ 2703), Joint Ministerial Decision 167563/2013 (B’ 964) and Ministerial Decision 170225/2014 (B’ 135), issued under the authorisation of Law 4014/2011 (A’ 209), in compliance with Directive 2014/52/EU amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment”, of the European Parliament and of the Council of 16 April 2014.

JMD 172058/2016 (GG B’ 354/17.2.2016) establishes rules, measures and conditions for the control of major-accident hazards involving dangerous substances and applies where the relevant scope and dangerous-substance thresholds are met.

The assessment of impacts deriving from the Project’s vulnerability to risks of major accidents and/or disasters has considered major accident and disaster scenarios that could occur during the Asopus-1 offshore drilling campaign and that may result in consequences beyond routine operational impacts. The relevant scenarios, as described in the Project’s QRA (Chapter 9) include blowouts, fires, explosions, toxic releases, marine accidents, loss of position, structural failure, reduction in stability, dropped objects and helicopter-related incidents. These scenarios are low-frequency events, but they are assessed because of their potential to cause significant safety, environmental or transboundary consequences.

### 10.2.1 Environmental and social receptors that may be affected in the event of a major accident or disaster

Table 10-22 identifies the environmental and social receptors that may be affected in the event of a major accident or disaster associated with the Project. This screening is based on the major accident hazards identified for the Asopus-1 drilling campaign (Chapter 9). Accident scenarios are assessed separately from routine operational impacts.

For each scenario, receptors have been screened according to whether a credible impact pathway exists. Such pathways may include accidental releases of hydrocarbons, fuels, chemicals or wastes to sea, atmospheric emissions from fire or explosion events, underwater or airborne noise, waste (debris) generation, seabed pollution/disturbance, disruption to maritime activities and risks to personnel and other marine users.

Several environmental parameters are not expected to experience significant impacts from major accident or disaster scenarios and are therefore scoped out from detailed assessment:

- No material impact on microclimate is expected. Although a fire or explosion could generate short-term heat and smoke near the MODU, these effects would be localised and temporary and would not alter microclimatic conditions.

- No impact on tectonics or seismicity is expected. The Project does not involve hydraulic fracturing, large-volume injection, production, reservoir depletion or underground storage. Seismicity is relevant only as an external natural hazard that could affect well integrity or subsea equipment, rather than as an impact caused by the Project.
- No direct impact on terrestrial habitats, vegetation or terrestrial fauna is expected from offshore accident scenarios. Potential effects would be limited to unlikely onshore accident conditions where contaminants migrate beyond paved or engineered areas, or where an onshore spill, fire or helicopter accident occurs near terrestrial habitats. Where a credible pathway beyond existing operational areas is identified, the potential consequences are considered under the relevant onshore accident scenario; otherwise, these receptors are scoped out.
- Direct effects on marine vegetation and underwater flora are not anticipated, as the offshore well location is in deep water where marine vegetation is not expected. Effects in shallower coastal waters would only be possible under a worst-case spill scenario in which hydrocarbons or pollutants drifted towards coastal habitats.
- No significant impact from electromagnetic radiation is expected. Emergency communications, radar, navigation and monitoring systems may be used during incident response, but these would remain within normal maritime and aviation operating parameters.
- No significant impact on energy or telecommunications infrastructure is expected under major accident scenarios. Potential interaction could occur if emergency response or accident conditions disrupted communications systems, offshore operational monitoring or port and airport coordination, but physical damage to regional energy or telecommunications infrastructure is not anticipated.

The matrix (Table 10-22) therefore provides a structured basis for identifying which receptors require further consideration in the assessment of impacts deriving from the Project's vulnerability to risks of major accidents and/or disasters. It should be noted that inclusion of a receptor in the matrix does not imply that an impact will occur, but only that a plausible pathway exists under the relevant accidental scenario.

Table 10-22: Environmental and social receptors that may be affected in the event of a major accident or disaster

| MAJOR ACCIDENT SCENARIOS                                          | SIGNIFICANT ENVIRONMENTAL PARAMETERS (SEPS) |                |                                               |           |                                               |                 |                          |      |                      |                                   |                                        |                                                   |              |                 |                 |                          |                               |                               |               |                                                          |                   |                       |                          |                       |                         |                                |                                                                |                              |             |                 |                  |            |                           |          |                |             |  |
|-------------------------------------------------------------------|---------------------------------------------|----------------|-----------------------------------------------|-----------|-----------------------------------------------|-----------------|--------------------------|------|----------------------|-----------------------------------|----------------------------------------|---------------------------------------------------|--------------|-----------------|-----------------|--------------------------|-------------------------------|-------------------------------|---------------|----------------------------------------------------------|-------------------|-----------------------|--------------------------|-----------------------|-------------------------|--------------------------------|----------------------------------------------------------------|------------------------------|-------------|-----------------|------------------|------------|---------------------------|----------|----------------|-------------|--|
|                                                                   | CLIMATIC AND BIOCLIMATIC CHARACTERISTICS    |                | MORPHOLOGICAL AND TOPOLOGICAL CHARACTERISTICS |           | GEOLOGICAL, TECTONIC AND SOIL CHARACTERISTICS |                 |                          |      | TERRESTRIAL HABITATS |                                   | MARINE HABITATS                        |                                                   | AVIFAUNA     | PROTECTED AREAS |                 |                          | ANTHROPOGENIC ENVIRONMENT     |                               |               | SOCIO-ECONOMIC ENVIRONMENT                               |                   | SOCIAL INFRASTRUCTURE | TECHNICAL INFRASTRUCTURE |                       |                         | ATMOSPHERIC ENVIRONMENT        | ACOUSTIC ENVIRONMENT AND EMISSIONS OF VIBRATIONS AND RADIATION |                              |             | WATER RESOURCES |                  |            |                           |          |                |             |  |
|                                                                   | Microclimate                                | Climate change | Morphology                                    | Landscape | Geology / Marine Geology                      | Slope stability | Tectonics and Seismicity | Soil | Seabed               | Terrestrial habitats – vegetation | Terrestrial fauna (excluding avifauna) | Marine habitats – underwater vegetation and flora | Marine fauna | Avifauna        | Protected Areas | Forests and wooded areas | Other important natural areas | Spatial Planning and Land Use | Maritime Uses | Structure and Functions of the Anthropogenic Environment | Cultural Heritage | Economic activities   | Community H&S            | Social Infrastructure | Maritime Infrastructure | Other transport infrastructure | Energy, Telecoms                                               | Environmental infrastructure | Air quality | Airborne noise  | Underwater noise | Vibrations | Electromagnetic radiation | Seawater | Surface waters | Groundwater |  |
| Blowouts                                                          |                                             |                |                                               |           |                                               |                 |                          |      |                      |                                   |                                        |                                                   |              |                 |                 |                          |                               |                               |               |                                                          |                   |                       |                          |                       |                         |                                |                                                                |                              |             |                 |                  |            |                           |          |                |             |  |
| Blowout / uncontrolled well release                               |                                             |                |                                               |           |                                               |                 |                          |      |                      |                                   |                                        |                                                   |              |                 |                 |                          |                               |                               |               |                                                          |                   |                       |                          |                       |                         |                                |                                                                |                              |             |                 |                  |            |                           |          |                |             |  |
| Fires, Explosions and Toxic Releases                              |                                             |                |                                               |           |                                               |                 |                          |      |                      |                                   |                                        |                                                   |              |                 |                 |                          |                               |                               |               |                                                          |                   |                       |                          |                       |                         |                                |                                                                |                              |             |                 |                  |            |                           |          |                |             |  |
| Ignited blowout / fire / explosion                                |                                             |                |                                               |           |                                               |                 |                          |      |                      |                                   |                                        |                                                   |              |                 |                 |                          |                               |                               |               |                                                          |                   |                       |                          |                       |                         |                                |                                                                |                              |             |                 |                  |            |                           |          |                |             |  |
| Toxic gas release, including H <sub>2</sub> S where present       |                                             |                |                                               |           |                                               |                 |                          |      |                      |                                   |                                        |                                                   |              |                 |                 |                          |                               |                               |               |                                                          |                   |                       |                          |                       |                         |                                |                                                                |                              |             |                 |                  |            |                           |          |                |             |  |
| Marine events                                                     |                                             |                |                                               |           |                                               |                 |                          |      |                      |                                   |                                        |                                                   |              |                 |                 |                          |                               |                               |               |                                                          |                   |                       |                          |                       |                         |                                |                                                                |                              |             |                 |                  |            |                           |          |                |             |  |
| Ship collision / attendant vessel collision                       |                                             |                |                                               |           |                                               |                 |                          |      |                      |                                   |                                        |                                                   |              |                 |                 |                          |                               |                               |               |                                                          |                   |                       |                          |                       |                         |                                |                                                                |                              |             |                 |                  |            |                           |          |                |             |  |
| Structural failure / reduction in stability / capsize             |                                             |                |                                               |           |                                               |                 |                          |      |                      |                                   |                                        |                                                   |              |                 |                 |                          |                               |                               |               |                                                          |                   |                       |                          |                       |                         |                                |                                                                |                              |             |                 |                  |            |                           |          |                |             |  |
| Loss of dynamic positioning / loss of position                    |                                             |                |                                               |           |                                               |                 |                          |      |                      |                                   |                                        |                                                   |              |                 |                 |                          |                               |                               |               |                                                          |                   |                       |                          |                       |                         |                                |                                                                |                              |             |                 |                  |            |                           |          |                |             |  |
| Dropped objects                                                   |                                             |                |                                               |           |                                               |                 |                          |      |                      |                                   |                                        |                                                   |              |                 |                 |                          |                               |                               |               |                                                          |                   |                       |                          |                       |                         |                                |                                                                |                              |             |                 |                  |            |                           |          |                |             |  |
| Dropped objects (subsea)                                          |                                             |                |                                               |           |                                               |                 |                          |      |                      |                                   |                                        |                                                   |              |                 |                 |                          |                               |                               |               |                                                          |                   |                       |                          |                       |                         |                                |                                                                |                              |             |                 |                  |            |                           |          |                |             |  |
| Helicopter accident                                               |                                             |                |                                               |           |                                               |                 |                          |      |                      |                                   |                                        |                                                   |              |                 |                 |                          |                               |                               |               |                                                          |                   |                       |                          |                       |                         |                                |                                                                |                              |             |                 |                  |            |                           |          |                |             |  |
| Spill to sea, including diesel bunkering or helifuel tank rupture |                                             |                |                                               |           |                                               |                 |                          |      |                      |                                   |                                        |                                                   |              |                 |                 |                          |                               |                               |               |                                                          |                   |                       |                          |                       |                         |                                |                                                                |                              |             |                 |                  |            |                           |          |                |             |  |

LEGEND

No impact

Negligible impact

Negative impact

## 10.2.2 Accident scenarios

### 10.2.2.1 Blowout and well release scenarios

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A blowout is defined as an uncontrolled release of fluid from a well. The most significant hazard is the uncontrolled release of hydrocarbons to the surface, although drilling mud, wellbore fluids or water may also be released. Blowout risks are important because they have the potential to release large quantities of hydrocarbons, may be difficult to control, and could cause significant damage to the drillship and the environment, as well as posing a major threat to personnel.

The identified blowout scenarios include hydrocarbon blowouts located on the drill floor, in the moonpool, in the mud processing room and subsea, as well as shallow gas blowouts. These scenarios represent the principal major accident events with potential environmental consequences, particularly when a release escalates into fire, explosion, gas dispersion or loss of containment to the marine environment.

Ignited blowouts may result in jet fires, thermal radiation, smoke generation, structural damage and escalation. In the case of a drill floor fire, flames could affect the drill floor and drill tower area, while delayed ignition may result in flash fire or explosion, generating overpressure capable of damaging critical equipment or causing fatalities. Thermal radiation and smoke from an ignited blowout could also impair temporary refuge, lifeboats or other safety functions if the event escalates.

Unignited blowouts may result in gas dispersion. The consequence assessment indicates that gas ingress to temporary refuge could cause asphyxiation or explosion if ignited, although temporary refuge impairment is dependent on gas or smoke dispersion, air intake location, HVAC shutdown and sealing performance. The integrity of the HVAC system is therefore identified as critical to the ability of the temporary refuge to provide its safety function.

For subsea blowouts, hydrocarbon fluids rise to the surface due to their relatively low density, while gas releases rise rapidly and expand as hydrostatic pressure decreases. At the Asopus-1 water depth of approximately 840 m, the QRA consequence modelling does not predict a sustained flammable gas cloud at the topsides under the assessed subsea blowout scenarios. However, a subsea blowout remains an environmentally significant scenario because the release may still result in environmental consequences in the water column or at the sea surface.

### 10.2.2.2 Fire, explosion and toxic release

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#### 10.2.2.2.1 Fire, explosion and smoke

Fire and explosion scenarios may arise from well-related events, mud treatment areas or other onboard areas.

Drilling fluid required for planned and emergency operations is treated, stored and circulated in the mud system on the MODU. The main mud treatment areas include mud pits, shale shaker room and mud pump room. Potential causes of explosion in these areas include the accumulation of gas in the mud system,

particularly where gas from the well is brought back to the MODU with the returning drilling mud during well-control operations. Explosion risk may also increase if ventilation is insufficient to disperse this gas, allowing flammable concentrations to build up within enclosed or semi-enclosed mud treatment areas.

According to the consequence assessment for fire in mud treatment areas, the probability of escalation to surrounding areas is 0.015, based on the presence of appropriate protection measures. However, none of the reported mud area incidents examined in the QRA were found to escalate beyond the area of initiation. Therefore, based on the QRA screening criteria, the low escalation probability and the credited protection measures, this event was not taken forward for detailed consequence modelling.

Other fire events include fires and explosions not related to well operations. These may involve hydrocarbons such as helifuel, diesel and lube oil, or non-hydrocarbon fires such as accommodation, electrical or chemical fires. Although many such fires are limited in size and duration, some recorded events have caused severe damage and fatalities. The identified examples include fire in accommodation and fire in the main engine rooms.

Accommodation fire scenarios may involve the galley or laundry areas. Fire spread is considered unlikely in these cases because of limited combustible inventory and fire-rated construction, although smoke logging of the accommodation may occur. In an escalated accommodation fire, the integrity of the main control room could be compromised because it is located above the accommodation block.

A fire in the main engine room could involve a potentially large volume of fuel oil. Possible initiating causes include fractured fuel lines, leaks from the fuel system contacting hot surfaces, oily rags close to hot machinery and welding work. The engine rooms are protected by gas, smoke and flame detection, fire alarm pushbuttons, fixed CO<sub>2</sub> extinguishing systems, portable firefighting equipment and fire hose stations.

#### 10.2.2.2.2 Toxic gas release

Toxic gas, particularly H<sub>2</sub>S, may occur naturally in the reservoir or formation being drilled. Significant quantities could be released during a well control situation, when circulating out following a kick, during an actual blowout or through a leak from well test equipment (not planned for Asopus-1). H<sub>2</sub>S may also become entrained in drilling mud and be brought onboard with mud returns.

The assessment identifies H<sub>2</sub>S primarily as a major accident and personnel safety hazard, with potential implications for emergency response and control of the incident. Detection and mitigation measures include H<sub>2</sub>S detectors in areas where gas is most likely to be released, alarm activation at 10 ppm, high toxic gas alarm at 20 ppm, emergency shutdown actions and automatic ventilation control in the affected area. The QRA assumes that where the potential for H<sub>2</sub>S is identified through available well and formation information, additional measures would be implemented in accordance with the approved drilling programme and relevant H<sub>2</sub>S procedures.

### 10.2.2.3 Marine events

#### 10.2.2.3.1 Marine collision

During normal offshore operations, the MODU will be exposed to collision risks from passing merchant vessels, fishing vessels in transit and supply vessels travelling to the drillship location.

Where an errant vessel is heading towards the drillship, radio or other communication would be used to establish contact and determine the vessel's status. If this fails, preventive action may include disconnecting the riser and attempting to move off. If move-off is unsuccessful, collision with the drillship could impact hull tanks containing diesel or base oil. In such a case, the main damage is expected to be environmental and asset-related, with the severity of environmental damage depending on the inventory of oil onboard the drillship.

The QRA identifies two main collision avoidance measures once a threat has been confirmed: warning the threatening vessel through available communication means, and disconnecting and moving the drillship to a safe location. The support vessel, when available, may also be used to avert collision through sound and light signals, although successful avoidance depends on the approaching vessel being manned and capable of corrective action.

#### 10.2.2.3.2 Structural failure and reduction in stability

Structural failure may be influenced or accelerated by structural weakness, design or fabrication defects, incorrect modification, inadequate maintenance, inspection or testing, overloading due to human error or extreme weather, and consequences of fires, explosions, reduction in stability, impact or grounding. Such failure may develop into a major accident through compartment flooding, reduction in stability, loss of structural strength or progressive collapse.

The consequence assessment indicates that structural failures are most likely to result in fatalities where evacuation is required, particularly if the drillship founders or capsizes, or where listing is so severe that capsize appears likely. These events are normally considered to occur in moderate or severe weather, where evacuation is hazardous. Any event resulting in capsize is likely to result in severe environmental damage.

Reduction in stability may be caused by flooding following vessel collision, structural failure or extreme environmental conditions. It may lead to vessel capsizing with potential material and environmental consequences. In rapid foundering or capsize scenarios, there may be insufficient time for evacuation using TEMPSC (Totally Enclosed Motor Propelled Survival Craft), and the chance of rescue and recovery is assessed as low under severe weather conditions.

#### 10.2.2.3.3 Loss of dynamic positioning or loss of position

Loss of position occurs when there is an unintentional move-off of the drillship. This may result from thruster failure, loss of power, malfunctioning computer software or reference system failure. The relevant scenarios include large excursions, drift-off and drive-off. The MODU DP control system is designed to comply with DNV

DYNPOS AUTRO, equivalent to IMO DP Class 3, requiring fully redundant propulsion and control systems so that no single failure can disable both systems.

Large excursions are treated as operational in nature. Drift-off may result from loss of power to the thrusters, while drive-off may result from faults in thrusters, control systems or position reference systems. In a drive-off event, the drillship may move towards an incorrect reference point or accelerate away from the correct position if the DP control system fails to respond appropriately.

Following a loss of position incident, attempts would be made to close the BOP and disconnect the riser. If closure and disconnection are successful, the QRA assumes no significant damage except where the riser hits the seabed. If disconnection is unsuccessful, the QRA models riser parting and BOP closure. The fail-safe system incorporated into the BOP means that, in most cases, the BOP is designed to initiate closure if a loss of position occurs.

Loss of station keeping is not predicted by the QRA to result in loss of life or impairment of safety functions under the assessed base scenarios, and environmental consequences are expected to be negligible. It is also expected to have negligible environmental consequences unless the BOP fails to close or disconnection fails. In that unlikely escalation case, failure to close the BOP could result in environmental damage.

#### 10.2.2.3.4 Dropped object scenarios

Dropped object hazards include dropped objects from main cranes, accommodation service cranes, pipe handling cranes, riser gantry cranes, BOP overhead crane, xmas tree handling crane, SBOP crane and the mast. Dropped loads from cranes, the drill tower or other lifting devices could result in injuries or fatalities, release of hazardous material if the object falls on deck or seabed, or damage to structural support.

The greatest risk from dropped objects is to personnel through direct impact, striking or crushing. Dropped objects may also impact or puncture critical equipment or structural elements, although the probability of such events impairing safety functions or requiring evacuation is considered low because of the limited topsides inventories on the MODU and the assumed application of lifting procedures consistent with industry good practice.

Subsea dropped objects are mainly relevant where they could impact subsea infrastructure. As the MODU will operate in deep water, the likelihood of a dropped object directly impacting equipment below the vessel is considered very unlikely, as the object may be carried by currents and deviate horizontally during descent. Any hydrocarbon release following impact on subsea infrastructure would disperse in the water column, and ignition is considered unlikely.

Dropped objects on the drill floor could cause a well-control problem if critical equipment were damaged, but the likelihood is considered very low given the design and high level of automation of the drillship tubular handling system. The probability of safety function impairment due to dropped objects is expected to be negligible, and dropped objects are not considered to cause environmental damage under the assessed scenarios.



#### 10.2.2.3.5 Helicopter accident

Helicopter-related major accident scenarios include incidents occurring on or close to the MODU, incidents during transit between the shore base and the MODU, and accidents during take-off or landing. The QRA considers both the in-flight stage and the take-off and landing stages, including the potential for a helicopter crash on the installation. For the base case, helicopter flight time is assumed to be approximately one hour in total, comprising 30 minutes each way.

Potential helicopter accident scenarios include:

- Heavy landing or crash onto the helideck, with the possibility of subsequent fire,
- crash into the sea,
- crash onto other areas of the drillship,
- approach or landing accident in which the helicopter continues beyond the helideck and impacts the bridge, control room or other safety-critical structures.

These scenarios are primarily associated with risks to personnel and assets. However, escalation could occur if a crash or subsequent fire affects the helideck, control room, bridge or other safety-critical areas of the MODU.

#### 10.2.2.3.6 Spill to sea, including diesel bunkering or helifuel tank rupture

Accidental spills to sea may occur as a result of diesel release during bunkering operations or rupture of a helifuel tank. The main impact pathway would be the accidental release of fuel to the marine environment, resulting in localised contamination of seawater and, depending on spill volume, weather conditions and response effectiveness, potential exposure of marine fauna, seabirds, fish, plankton and surface-feeding organisms. Diesel and aviation fuel are relatively light petroleum products and may evaporate and disperse more rapidly than heavier oils. However, they can still cause acute toxic effects, surface sheening, localised water quality deterioration and physical exposure of birds or marine fauna if not rapidly contained.

The receptors most likely to be affected are seawater quality, marine fauna, avifauna, marine habitats, fisheries and maritime traffic. Potential indirect effects may also occur on economic activities where a spill causes temporary exclusion from an area, affects fishing activity, or requires emergency response measures. If residues settle or are dispersed through the water column, localised effects on seabed quality and benthic habitats may also occur, although this is expected to be limited for small-volume light fuel releases.

The likelihood and scale of impacts will be reduced through standard bunkering procedures, inspection and maintenance of hoses and transfer equipment, use of drip trays and containment arrangements, supervision of fuel transfer operations, emergency shutdown procedures, weather-related operational restrictions, secure storage of helifuel, spill response equipment onboard the MODU and support vessels, and implementation of the Project's Emergency Response Plan. Any spill would be reported and managed in accordance with applicable marine pollution response and notification requirements.

Overall, spill-to-sea scenarios involving diesel bunkering or helifuel tank rupture could result in short-term, localised adverse impacts on seawater quality and marine ecological receptors. The impact is assessed as negative, direct, temporary and reversible. With the proposed prevention and response measures in place, the residual impact from a small, promptly controlled release is expected to be minor. In the unlikely event

of a larger uncontrolled release or delayed response, impacts could become more significant and may require transboundary notification and coordinated emergency response, in accordance with applicable requirements.

### 10.2.3 Potential impacts deriving from the vulnerability of the project to risks of major accidents and/or disasters

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The potential impacts addressed in this section are associated with the Project's vulnerability to major accidents and/or disaster scenarios, rather than with normal Project operations. The principal accident-related pathways comprise accidental releases to sea, atmospheric emissions from fire or explosion events, marine pollution, disturbance or harm to marine fauna and seabirds, disruption to maritime activities, temporary pressure on emergency and environmental infrastructure, and risks to offshore personnel and emergency responders. The likelihood and severity of these events will be reduced through well-control barriers, BOP systems, DP Class 3 redundancy, collision avoidance procedures, marine coordination, fire and gas detection, emergency shutdown systems, spill prevention and response arrangements, weather monitoring, emergency preparedness and compliance with applicable offshore safety requirements.

#### 10.2.3.1 Marine pollution and water quality

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##### 10.2.3.1.1 Seawater – oil spill modeling

Seawater is one of the key receptors in the event of a major accident. A blowout, spill, collision, capsizing, loss of containment, discharge of firefighting water, or release of chemicals or fuels could affect seawater quality. Potential effects may include hydrocarbon contamination, dissolved pollutants, increased turbidity, increased oxygen demand and toxicity to marine organisms. These effects would be most relevant in scenarios involving an uncontrolled well release, vessel collision affecting fuel or chemical inventories, loss of containment, or emergency response activities that generate contaminated waters or residues.

Oil spill modeling was undertaken to support the assessment of potential non-routine impacts on seawater quality in the event of an accidental surface release of Marine Gas Oil (MGO) as presented in Chapter 9.

The modeling was carried out using OSCAR (Oil Spill Contingency and Response), a numerical model developed by SINTEF for simulating the fate of oil at sea. OSCAR can evaluate the evolution of oil on the water surface, in the water column and along shorelines, including oil fate and weathering processes. The model may be applied deterministically, for a specific time-window scenario, or stochastically, through multiple deterministic simulations used to generate probabilistic outputs for oil fate, including affected areas, minimum arrival times and probabilities of oil reaching different parts of the model domain.

##### Input data and assumptions

For the surface spill scenario, an instantaneous release of 2,201 bbl, equivalent to 350 m<sup>3</sup>, was modelled. The simulation duration for the surface spill was 30 days, which was considered sufficient for the main oil weathering processes to occur. The oil type used for the surface release was MGO, represented in the OSCAR database by MGO 500 PPM. The properties used for this oil include a specific gravity of 0.852 g/cm<sup>3</sup>, viscosity of 6 cP at 10 °C, pour point of -36 °C, wax content of 0.81% and asphaltene content of 0.02%.

The modeling considered two seasonal periods: Season 1, from October to March, and Season 2, from April to September. These seasons were selected to represent the main metocean variability in the study area. Season 1 corresponds to the winter circulation regime, characterised by stronger and more variable winds and enhanced cyclonic activity, while Season 2 represents the summer circulation regime, with more stable atmospheric conditions, prevailing northwesterly winds over the Ionian Sea and lower average wind speeds.

The principal environmental inputs to the model comprised wind, current, temperature, salinity, bathymetry and coastline classification data. Temperature and salinity profiles were derived from CMEMS data, with seasonal variations considered. Ocean current fields were obtained from the Copernicus Marine Service Mediterranean Sea Physics Analysis and Forecast product, while wind data were obtained from the ERA5 atmospheric reanalysis produced by ECMWF. At the release point, currents were predominantly towards the west and west-southwest in Season 1 and towards the southwest and west-southwest in Season 2, with most current intensities between 0.1 and 0.2 m/s.

The model grid covered a zonal extent of 2,000 km and a meridional extent of 1,800 km, with a horizontal resolution of 2,000 m. For the surface release scenario, the vertical grid resolution included a 2 m surface layer and 10 m layers below, with a maximum concentration grid depth of 202 m. The model calculation time step was 15 minutes, with model outputs generated every 60 minutes. A total of 500 stochastic simulations were performed for each season.

Bathymetry was based on GEBCO data at 30 arc-second resolution. Shoreline interaction in the model was represented using the GCL\_FCS30 global coastline dataset, which provides coastline classification at 30 m resolution. The coastline types considered in the study area included rocky shore, sandy beach, sheltered artificial structure, tidal flat and mangrove/marsh/vegetated river mouth.

For interpretation of the results, threshold values were adopted for surface oil, water-column concentrations and shoreline oiling. A surface oil threshold of 0.3  $\mu\text{m}$  was used, corresponding to rainbow sheen appearance under the Bonn Agreement Oil Appearance Code. A water-column threshold of 0.058 ppm was applied for dispersed oil, based on guidance for acute oil pollution effects on fish. A shoreline oiling threshold of 1 g/m<sup>2</sup> was used to identify coastal segments affected by stranded oil at levels relevant to recreational restrictions and cleanup activities.

## **Results and Conclusions**

The stochastic simulations for the instantaneous MGO surface spill scenario indicate that the highest-probability effects are concentrated near the release location, while lower-probability transport may extend over substantially greater distances, mainly due to the light refined nature of MGO, the instantaneous release and the rapid weathering and evaporation of the product. Surface oil drift was predicted in all directions from the release location in both seasons; however, the highest probabilities of occurrence were concentrated close to the release point and predominantly to the southwest, influenced by prevailing northerly winds and westward to northwestward surface currents.

At the sea surface, the maximum extent of oil drift for probabilities greater than 90% was approximately 2 km from the spill location in both seasons. For probabilities greater than 30%, the maximum distance reached was approximately 4 km in Season 1 and 8 km in Season 2. Low-probability oiling could extend farther, reaching up to 122 km in Season 1 and 166 km in Season 2.

Within the water column, oil occurrence was mainly limited to the upper layers. Concentrations above the 0.058 ppm threshold were predicted from the surface to approximately 60 m depth in Season 1 ( ) and 45 m in Season 2 (Figure 10-4), with maximum concentrations of 1.19 ppm and 1.041 ppm respectively, occurring at approximately 10–20 m depth.

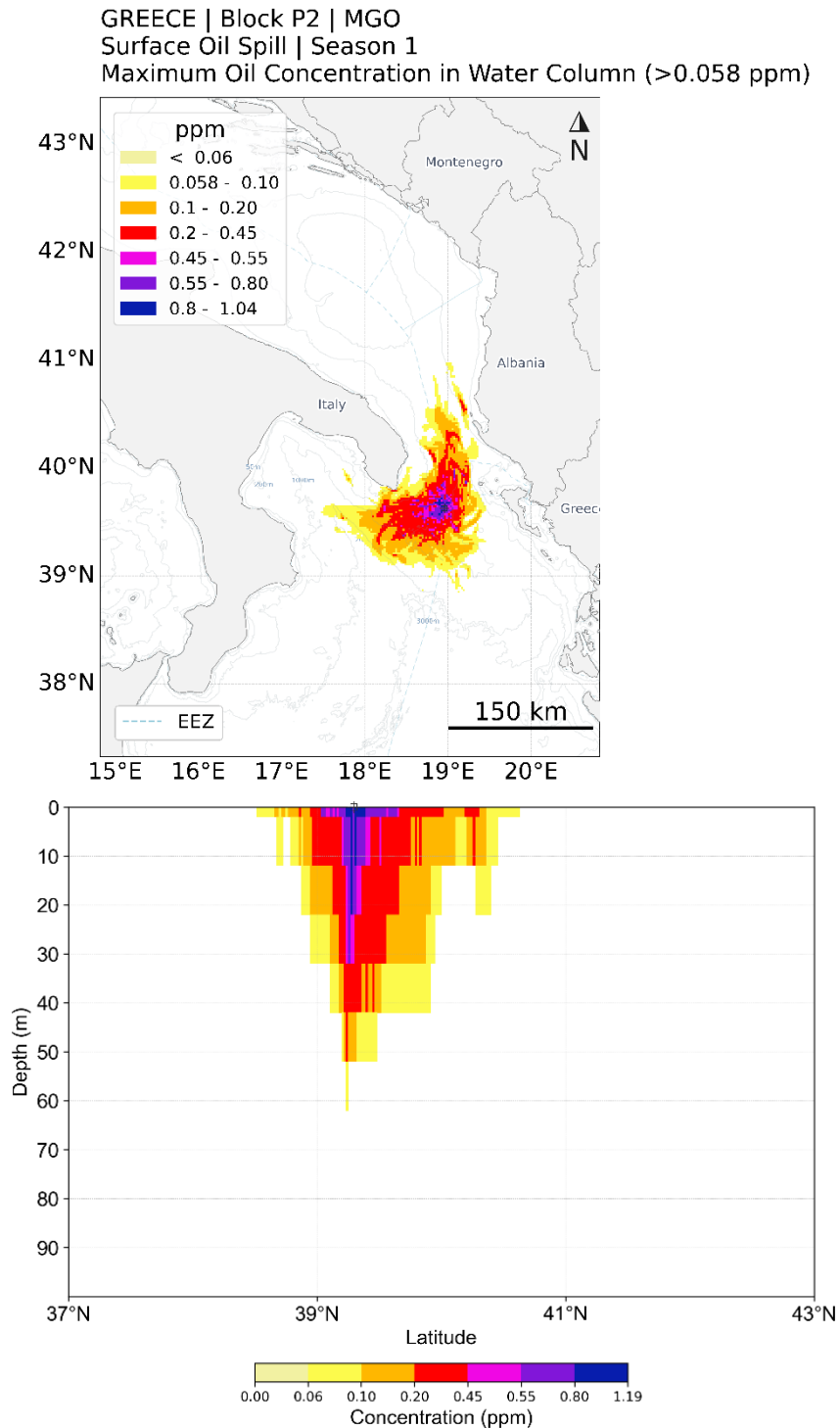
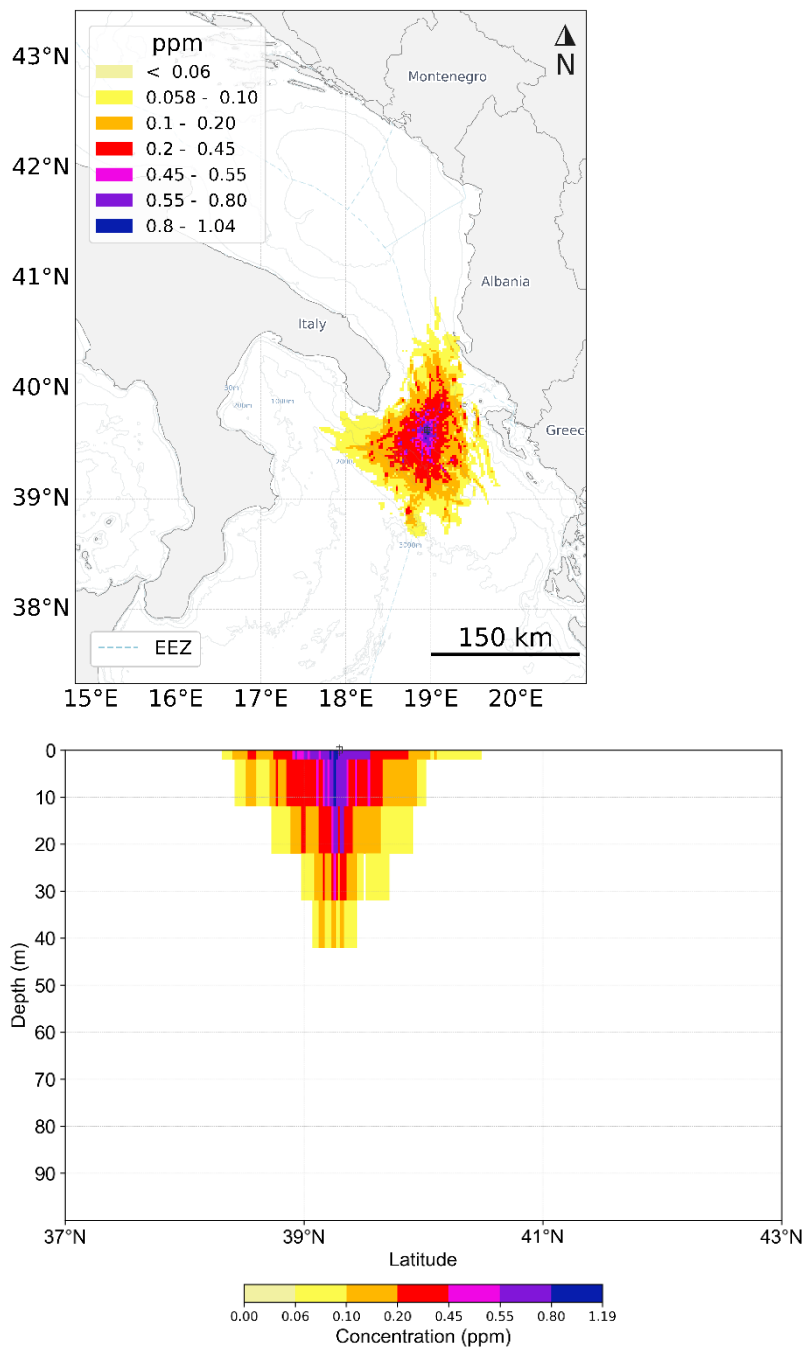


Figure 10-3: Maximum water column oil concentration and latitudinal vertical profile (> 0.058 ppm) for Surface MGO Spill, Season 1

GREECE | Block P2 | MGO  
Surface Oil Spill | Season 2  
Maximum Oil Concentration in Water Column (>0.058 ppm)



**Figure 10-4: Maximum water column oil concentration and latitudinal vertical profile (> 0.058 ppm) for Surface MGO Spill, Season 2**

Shoreline oiling was predicted as possible but with low probabilities. In Season 1, shoreline oiling may occur in five countries between Croatia and Greece, while in Season 2 it may occur in four countries. The highest shoreline oiling probability was predicted for Italy, reaching up to 5% in Season 1 and 12.2% in Season 2. The shortest shoreline arrival times were 2.8 days in Italy during Season 1 and 2.2 days in Greece during Season 2. These results are conservative, as they assume that no oil-spill response or mitigation measures are implemented.

The stochastic mass balance shows that dispersion within the water column and evaporation are the dominant fate processes. After 30 days, less than 0.05% of the released oil remained at the sea surface in both seasons, confirming the limited persistence of MGO at the sea surface.

Overall, the MGO surface spill scenario indicates a short-term and comparatively limited impact on seawater quality. The main effects would be temporary surface oiling near the release location, short-term dispersion in the upper water column and limited potential shoreline contact. Rapid evaporation, dispersion and biodegradation would substantially reduce surface oil persistence; therefore, the impact is assessed as temporary and mainly localised to regional depending on metocean conditions.

#### 10.2.3.1.2 Surface water and groundwater

Offshore accident scenarios would not directly affect inland surface waters. However, a potential pathway exists at onshore support areas if fuels, oils, chemicals, firefighting water or contaminated runoff entered the port stormwater drainage system or nearby coastal waters. Such effects would be localised and would depend on the scale of the release, the affected area, and the effectiveness of containment and response measures.

According to the oil spill modeling (Section 10.2.3.1.1), in both deterministic scenarios oil initially drifted northeastward and reached Othoni Island in Greece after approximately 2.25 days in the Minimum Arrival Time scenario and 2.79 days in the Maximum Mass on Shore scenario. No oil concentrations above the 0.3  $\mu\text{m}$  surface threshold were detected after approximately 10 days.

Predicted shoreline concentrations varied between the assessed deterministic scenarios. In the Minimum Arrival Time scenario, oil reached Othoni Island with an initial concentration of approximately 0.001  $\text{kg}/\text{m}^2$ , increasing to 0.193  $\text{kg}/\text{m}^2$  by the end of the simulation. In the Maximum Mass on Shore scenario, the final coastal accumulation reached 2.67  $\text{kg}/\text{m}^2$ . Shoreline oiling represented approximately 0.4% and 5.2% of the released mass in the two deterministic scenarios, while sedimentation remained negligible.

Groundwater impacts are not expected from offshore scenarios. At onshore support areas, a groundwater pathway could arise only if spills or contaminated firefighting water infiltrated through damaged paved surfaces, cracks, drainage points or unsealed areas. With containment and spill response measures, significant groundwater impacts are expected to remain unlikely.

#### 10.2.3.2 Seabed, morphology, marine geology and slope stability

Accident-related impacts on the seabed could arise from a subsea blowout, dropped objects, riser or BOP damage, sunken debris, vessel loss, or the release of hydrocarbons, drilling fluids or chemicals. Potential effects may include local physical disturbance, smothering, contamination or debris deposition. These effects would be associated with the immediate affected area and are not expected to result in a regional seabed impact.

Potential impacts on seabed morphology would be limited to exceptional scenarios such as a subsea blowout, dropped object, riser or BOP damage, structural failure, or sinking of equipment. Effects could include local sediment displacement, debris deposition, crater formation or localised disturbance of seabed features. Regional seabed morphology is not expected to be affected under the assessed scenarios.

Impacts on geology and marine geology could occur in the event of blowout, loss of well control or failure of well barriers. Such effects would be confined to the wellbore, surrounding formations and immediate subsurface environment. No regional geological or marine geological change is expected.

Potential effects on slope stability would be limited to highly localised disturbance from subsea release, dropped objects, riser contact or debris. Earthquakes or extreme weather may act as external hazards affecting the MODU, wellhead or BOP systems; however, no mechanism is expected through which the Project would trigger regional slope instability.

### 10.2.3.3 Air quality

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Air quality could be temporarily affected in the event of fire, explosion, smoke dispersion, gas release or combustion of hydrocarbons and fuels. The main pathway would be short-term deterioration of local air quality around the MODU or accident location. Smoke and gas dispersion from ignited and unignited blowouts have been considered in the consequence assessment. Due to the offshore location of the drilling campaign, significant onshore air-quality effects are unlikely, except under extreme accident scenarios.

A major fire, explosion or uncontrolled hydrocarbon release could also generate greenhouse gas emissions through combustion, emergency response and spill recovery activities. These emissions would be accidental and short-term. They would not represent a routine Project emission source and are not expected to materially affect climate-change trends or national climate targets.

### 10.2.3.4 Noise and vibration

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Airborne noise may increase temporarily during an accident or emergency response. Potential sources include explosions, alarms, emergency response vessels, helicopters, firefighting and evacuation activities. These effects would be short-term and would occur mainly offshore or within existing operational port or airport areas. Vibration effects may also arise locally from explosion, collision, structural failure, dropped objects or emergency operations, but would be short-term and localised, with no expected measurable effect on coastal receptors.

Underwater noise could increase during emergency response, vessel manoeuvring, ROV intervention, well-control operations, debris recovery or spill response. Explosions, collision or structural failure could also generate short-duration underwater acoustic events. Effects on marine fauna would depend on proximity, duration and intensity of the noise source.

### 10.2.3.5 Marine biodiversity, avifauna and protected areas

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Marine fauna is a key receptor in major accident scenarios. Potential impacts may include exposure to hydrocarbons, dissolved contaminants or toxic substances, underwater noise from emergency operations, physical injury from debris, and disturbance from response vessels or aircraft. A major subsea release or surface spill could affect fish, marine mammals, sea turtles and planktonic communities.

Avifauna may be affected in the event of a surface hydrocarbon spill, fire, smoke plume, debris field or emergency response activity. Potential impacts include oiling, ingestion of contaminants, displacement from



feeding areas and collision risk associated with emergency lighting or aircraft. These effects would be most relevant for seabirds using offshore waters or areas affected by a surface spill.

The Project footprint does not directly overlap with protected areas. Potential impacts on protected areas could occur only if a major spill or pollutant plume moved beyond the immediate Project area and reached designated marine or coastal areas. Such effects would depend on release volume, release duration, metocean conditions and the effectiveness of emergency response.

#### 10.2.3.6 Soil

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Offshore major accident scenarios would not affect soil. Potential soil impacts could arise only at onshore support locations, such as the shore base or airport hangar, from accidental releases of fuels, oils, chemicals, firefighting water or contaminated materials during emergency response, storage, transport or waste handling. Such effects would be localised and managed through appropriate containment and spill response.

#### 10.2.3.7 Spatial planning, maritime use and anthropogenic environment

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No permanent land-use change is expected as a result of major accident or disaster scenarios. However, a major accident could temporarily restrict use of marine space through exclusion zones, emergency response areas, vessel routing controls or temporary occupation of port areas. These effects would be temporary and linked to emergency management.

Potential impacts on the structure and functions of the anthropogenic environment include temporary disruption to port logistics, offshore operations, emergency services, maritime activities and local support functions. A major event may require mobilisation of emergency response resources and temporary restrictions on sea or port use.

Maritime transport and traffic are key receptors. Collision, loss of position, emergency response operations, spill response zones or temporary exclusion areas could disrupt vessel movements. These impacts would be temporary or longer-lasting depending on the nature and scale of the event, and could affect commercial shipping, fishing vessels and support traffic in the wider area.

Other transport infrastructure may be affected through helicopter operations and associated support activities, as well as increased road transport for emergency response, evacuation or waste transfer. These effects would be short-term and operational, with no expected physical impact on transport infrastructure.

#### 10.2.3.8 Economic activities

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The economic activities most relevant to major accident scenarios are fisheries, maritime transport, port services and tourism. A major spill, collision, blowout or extended emergency response could temporarily restrict fishing grounds, affect navigation, interrupt logistics or create reputational effects for coastal tourism.

### 10.2.3.9 Community health and safety

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Community health and safety effects are expected to be limited due to the offshore location of the principal accident scenarios. The primary risks would affect offshore personnel and emergency responders. Community health and safety impacts could arise only from an onshore support-base accident, helicopter accident near land, smoke exposure in port areas, or public concern during a major incident.

### 10.2.3.10 Environmental infrastructure

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Environmental infrastructure may experience increased temporary demand in the event of a major accident. Relevant resources include spill response equipment, waste reception facilities, hazardous waste contractors, firefighting systems, wastewater handling and emergency response infrastructure. The most important pathway is the generation of contaminated wastes, oily residues, firefighting water, debris or damaged equipment requiring licensed management.

### 10.2.3.11 Cultural heritage

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Potential impacts on cultural heritage are unlikely but cannot be fully excluded under major accident conditions. Subsea dropped objects, debris, anchoring by emergency vessels or a major spill response operation could theoretically affect underwater cultural heritage if present within the affected area. Where consistent with protection of life and emergency-response priorities, known cultural heritage locations will be considered during response planning and operations.

### 10.2.3.12 Landscape

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Landscape impacts would be limited. Offshore accident scenarios would have limited visual relevance due to the offshore location. A major fire or smoke plume could create a temporary visual effect at sea, while dismantling or emergency operations at the shore base could temporarily affect the industrial port landscape. No permanent landscape impact is expected.

### 10.2.3.13 Summary of potential impacts

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The most relevant impacts deriving from the Project's vulnerability to major accidents and/or disasters relate to accidental releases to sea, temporary deterioration of seawater and air quality, local seabed disturbance, effects on marine fauna and seabirds, disruption to maritime activities, temporary pressure on emergency and environmental infrastructure, and potential socio-economic effects on fisheries, maritime transport, port services and tourism perception.

The highest-consequence environmental pathways are associated with uncontrolled well release or blowout, major spill, collision, capsized and loss of containment. These events could generate contaminated wastes, disturb marine receptors or require temporary restrictions over marine space.

## 10.3 Assessment of cumulative/synergistic effects

This section assesses the likelihood that the impacts of the Project will interact with or be added to the impacts of other existing, approved or planned permitted and/or planned projects and/or activities in the wider northern Ionian Sea and adjacent coastal areas. The assessment focuses on activities that may overlap with the Project spatially and/or temporally, or that may affect the same environmental and social receptors, namely marine water quality, seabed habitats, marine fauna, fisheries, shipping, air quality, underwater noise, technical infrastructure and existing marine uses.

The assessment takes into account the current framework for maritime spatial planning, existing maritime uses and anticipated offshore activities in the wider study area. The project area is located within Spatial Unit 4 of the National Spatial Strategy for the Maritime Space (NSSMS); given that the detailed Maritime Spatial Planning Frameworks for this unit have not yet been finalised, the cumulative assessment was also based on existing national, regional and sectoral spatial planning instruments relating to shipping, fisheries, aquaculture, tourism, offshore infrastructure, renewable energy sources (RES) and, in particular, offshore wind farms currently at the licensing and development stage within the Italian EEZ, as well as development areas on the Greek side that are at the programme approval stage, and the development of the energy sector.

### 10.3.1 Commercial shipping, ferry services and international shipping

Commercial shipping and maritime traffic are among the main existing maritime uses with the potential to interact with the Project during its implementation period. The Ionian Sea is an important maritime corridor linking the Adriatic Sea, the central Mediterranean, the Suez Canal route and the wider Black Sea region, whilst existing traffic includes cargo ships, tankers, international passenger ferries, cruise ships and other commercial traffic, particularly along the routes linking the Italian ports on the Adriatic with Igoumenitsa, Patras and other Greek ports. Furthermore, in the context of the most recent geopolitical developments in the Persian Gulf and the Middle East (military operations in the south-eastern Mediterranean and the Persian Gulf), the Adriatic Sea is also used by warships. The maritime area west of Corfu, including the wider area of Section 2, falls within a zone of moderate to high shipping traffic, although the regional shipping lanes with the highest density are concentrated further west of Corfu and follow a broader north-west to south-east direction.

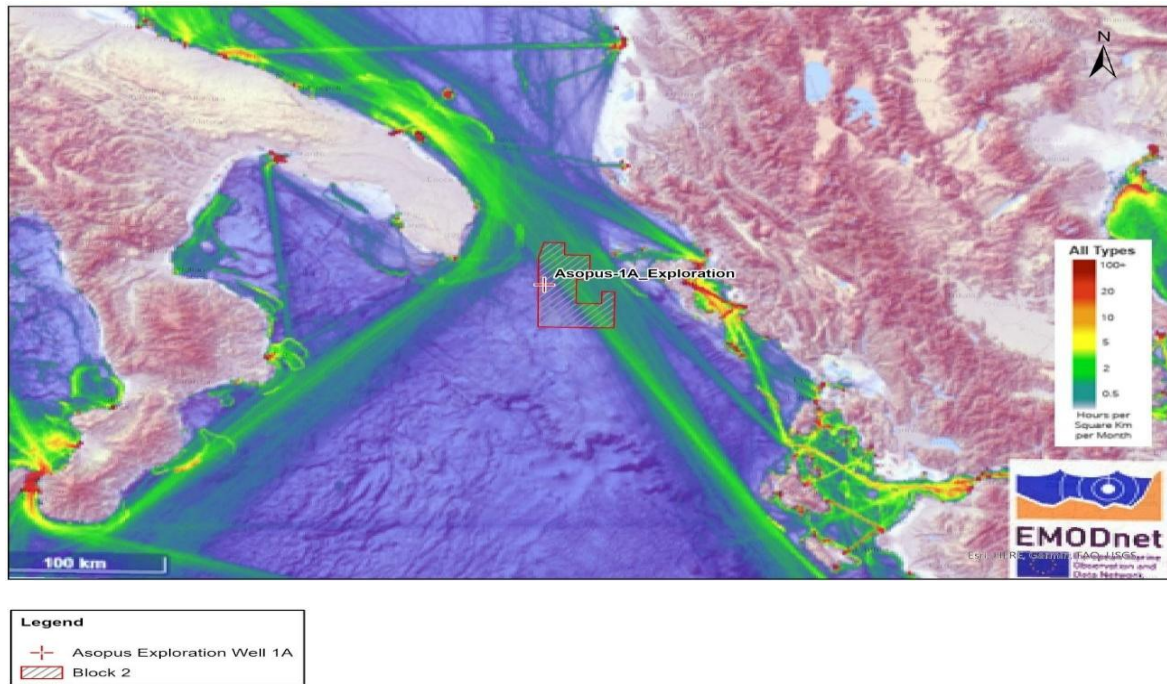


Figure 10-5: Average shipping traffic density (all vessel types), 2017–2024, in the Ionian Sea and the wider project area

The Project may interact cumulatively with these activities through the establishment of the 500 m safety zone, the temporary presence of the floating drilling unit and the movements of support vessels between the Port of Igoumenitsa and the location of the exploratory well

‘Asopos-1’. These interactions may require temporary notification of passing vessels regarding their route and could marginally increase local maritime traffic during mobilisation, drilling support and demobilisation (de-mobilisation). However, given the short-term and spatially limited nature of the Project, as well as the maritime safety measures to be implemented – including Notices to Mariners, NAVTEX messages, vessel coordination procedures and standard maritime safety practices – the cumulative impacts on commercial shipping and ferry services are expected to be minor, temporary and reversible.

Potential synergistic effects may arise when the movements of the Project’s vessels coincide with existing traffic of cargo ships, tankers or cruise ships, particularly in adverse weather conditions or when visibility is reduced. These impacts, however, are operational rather than environmental in nature and will be addressed through maritime coordination and navigation safety procedures. Consequently, no significant cumulative impact on international shipping is anticipated.

### 10.3.2 Commercial fishing and fishing grounds

Cumulative impacts on fisheries may arise when pressures associated with the Project are added to existing pressures from commercial fishing vessels operating in or transiting through the wider western Ionian Sea region. The main pressures common to both activities are underwater noise, the presence of vessels, artificial lighting, atmospheric emissions, minor discharges and local disturbance to marine fauna and seabed conditions.



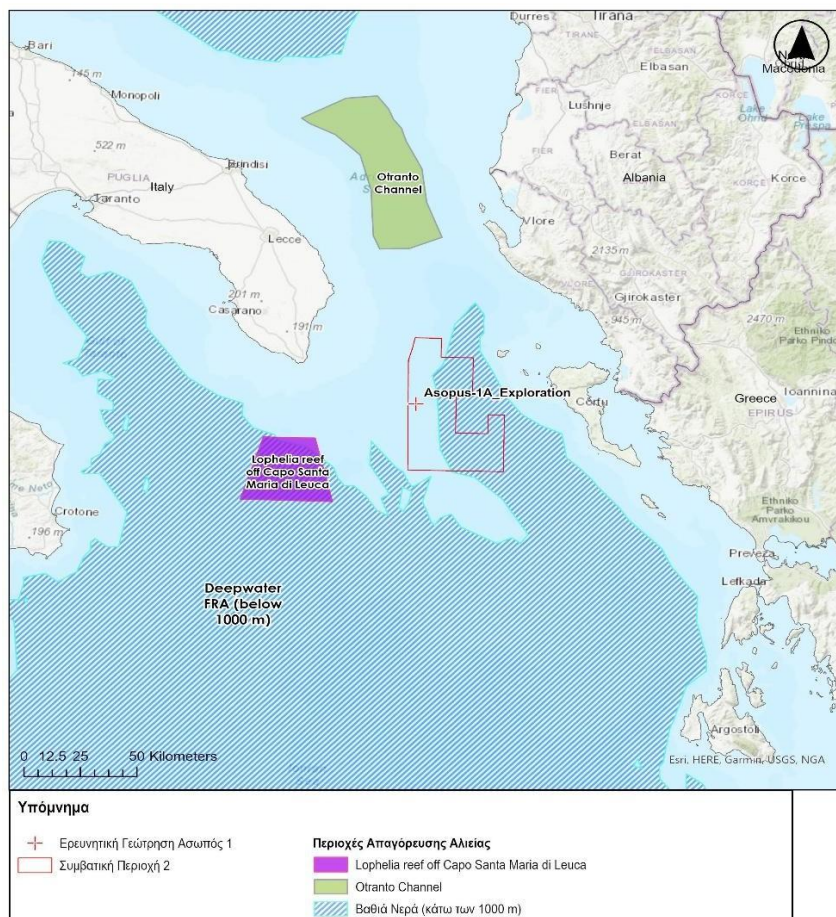


Figure 10-6: GFCM restricted fishing areas in the wider project area<sup>63</sup>

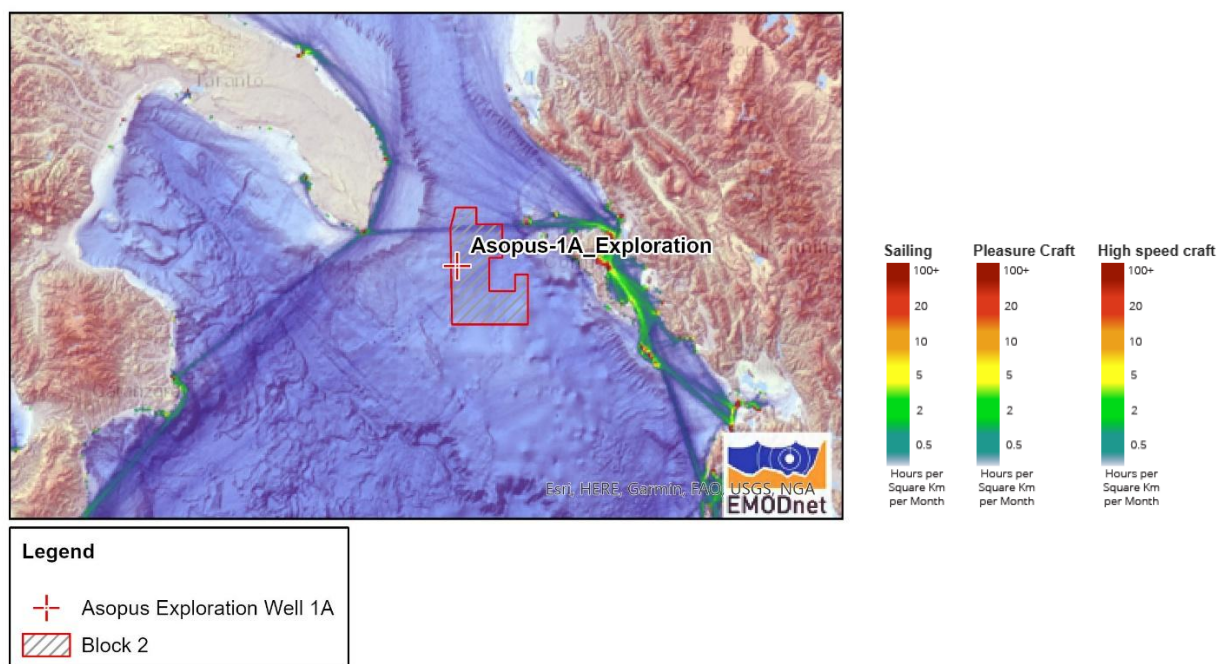
During the drilling campaign, the floating drilling rig and support vessels may temporarily increase overall vessel activity and underwater noise levels in the area surrounding the 'Asopos-1' exploration well site. Where this coincides with fishing vessel activity, it may cause short-term cumulative disturbance to marine fauna, mainly due to vessel noise, manoeuvres, lighting and human activity. Fishing activities may also cause local disturbance to the seabed or resuspension of sediments, which could exacerbate the local impacts of discharges associated with the Project's exploratory drilling and interaction with the seabed.

Synergistic effects are considered likely to occur when fishing activities and Project operations take place simultaneously and affect the same receptors, primarily marine fauna and the complexity of navigation, as the combined presence of fishing vessels, support vessels and the safety zone around the floating drilling unit could temporarily increase disturbance or operational pressure in the immediate offshore area. However, such impacts would be highly localised and short-term. Given that the bulk of fishing activity in the wider western Ionian Sea is concentrated mainly in coastal waters, whilst the Project's footprint is limited to a temporary offshore area of operations, the cumulative and synergistic impacts on fisheries are expected to be negligible to minor, temporary and reversible.

<sup>63</sup> <https://www.fao.org/gfcm/data/maps/fras/en/> (edited by: LDK)

### 10.3.3 Maritime tourism, recreational boating and cruises

Maritime tourism and recreational boating, including the hire of recreational craft and sailing, coastal cruises, recreational boating and cruising, are well established throughout the wider Ionian Sea, concentrated mainly around Corfu, Paxos, Antipaxos, the Diapontia Islands and the coast of Epirus (Error! Reference source not found. ). The main recreational boating routes are in coastal and inter-island waters, whilst the 'Asopos-1' exploratory well is located in offshore waters some distance from the main areas of concentration and movement.



**Figure 10-7:** Density of sailing, recreational and high-speed vessels (Annual average 2017–2024)<sup>64</sup>

A potential cumulative interaction could arise in cases where pleasure craft or cruise ships undertake longer offshore voyages between Greece and Italy and pass through the wider Project area; such interactions would be limited to temporary awareness of vessel movements and avoidance of the 500-metre safety zone. The Project is not expected to affect the main recreational sailing routes, coastal cruise areas, approaches to cruise ports or tourist destinations.

Potential synergistic effects could arise if shipping traffic associated with the Project coincides with the peak tourist season, when the density of recreational craft is highest throughout the Ionian region. However, given that recreational activity is mainly concentrated in the coastal zone, whilst the Project is located offshore, these impacts are expected to be limited. No significant cumulative or synergistic impacts on marine tourism, recreational activities or cruises are anticipated.

### 10.3.4 Aquaculture activities

<sup>64</sup> <https://EMODnet.ec.europa.eu/geoviewer/>

Aquaculture is an established but spatially limited marine use within the wider study area. Marine fish farming takes place along the north-eastern coast of Corfu and the coastline of Thesprotia, including designated or planned aquaculture development areas. These activities are concentrated in protected coastal waters and are spatially distinct from the open waters of Section 2 and the proposed location of the 'Asopos-1' borehole. There are no aquaculture facilities, nor are any planned, within the Project's onshore support area at the Port of Igoumenitsa. The distribution of aquaculture facilities within the wider study area is shown in the Figure below.

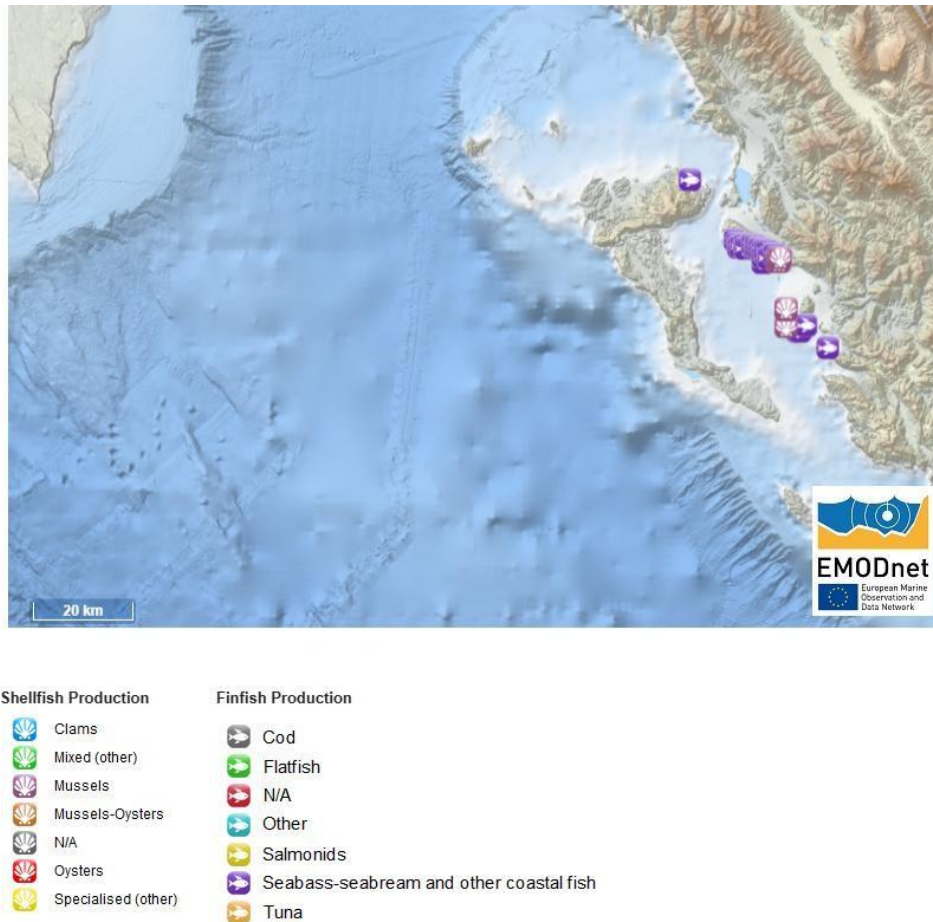


Figure 10-8: Distribution of aquaculture facilities in the wider study area <sup>65</sup>

Potential cumulative impacts could include changes in seawater quality, interactions with vessel traffic or incidents of accidental pollution. However, routine discharges from the boreholes will take place offshore and are expected to be rapidly diluted and dispersed, whilst the Project's support activities rely on existing maritime access routes and existing port facilities. Given that the location of the exploratory well is a considerable distance from existing aquaculture areas, with no direct spatial overlap, no significant cumulative impact is expected.

Potential synergistic impacts on aquaculture would only be possible in the event of a major accidental spill capable of reaching coastal waters, provided that no mitigation measures are taken. Such scenarios do not fall within the scope of normal operations and are addressed separately through emergency preparedness,

<sup>65</sup> <https://EMODnet.ec.europa.eu/geoviewer/>



oil spill contingency planning and the assessment of accidental events. Under normal operating conditions, no significant cumulative or synergistic effects on aquaculture are expected.

### 10.3.5 Submarine telecommunications and power cables

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Submarine cables constitute a permanent technical infrastructure of strategic importance in the Ionian Sea. Various international telecommunications cable systems connect Greece, Italy and other Mediterranean countries, whilst submarine electricity infrastructure also exists in the wider region, concentrated along corridors crossing the central and southern Ionian basin between the coasts of Italy and Greece. The spatial analysis carried out for the Project has identified three cable systems within the study area that are directly relevant to the Project:

- Eagle (under planning), a new trans-Mediterranean cable system connecting Egypt, Albania and Italy;
- Jonah (in operation since 2012), which connects Israel and Italy via the Eastern Mediterranean and the Ionian Sea;
- Asia Africa Europe-1 (AAE-1) (in operation since 2017), a major international telecommunications cable system linking Asia, Africa and Europe, with landing points including Bari (Italy).

Their location in relation to the 'Asopos-1A' exploratory well is shown in the Figure below.

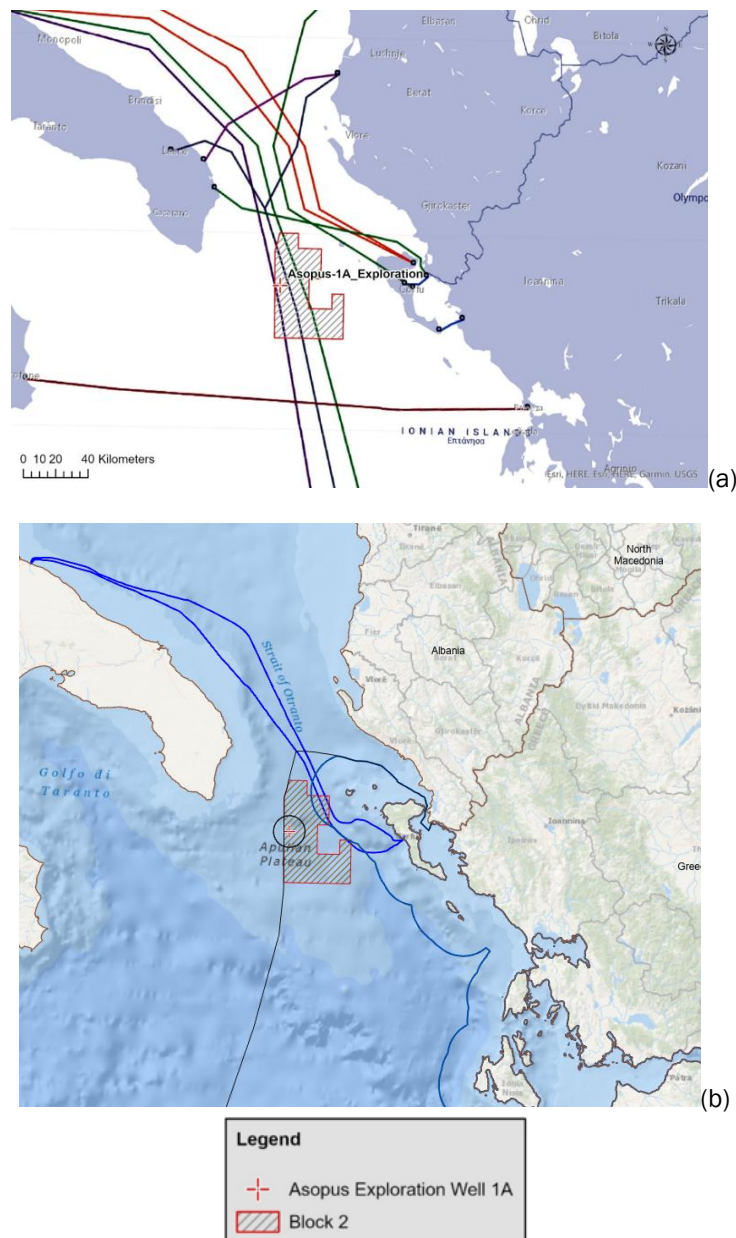


Figure 10-9: Subsea cables in relation to the project area: (a) Eagle, Jonah,<sup>66</sup> and (b) OTEGlobe Kokkini-Bari subsea cable systems

The location of the 'Asopos-1' exploratory well is at least 2,692 m from the cables identified within the study area, the nearest being the AAE-1 cable on the south-western side of the area investigated. The assessment took into account the potential for interaction with this infrastructure, particularly with regard to seabed disturbance, the location of the floating drilling unit, the operations of support vessels and emergency response activities.

The Project does not involve anchoring, trenching, the installation of pipelines or permanent subsea infrastructure. The floating drilling unit will operate using dynamic positioning, and the drilling area is limited to the well site and the immediate operational area. The cable routes will be verified against official nautical charts prior to works and, where required, against information provided by cable operators. Provided that

<sup>66</sup> <https://www.submarinecablemap.com>

standard avoidance and notification procedures are followed, no cumulative impact on subsea cable infrastructure is anticipated.

Potential synergistic effects may arise if the activities of the Project's support vessels, other marine works or emergency operations coincide near the cable corridors. However, given that no seabed intervention is planned along the cable routes and no cable route is expected to cross the operational area, such impacts are considered unlikely and insignificant.

### 10.3.6 Offshore oil and gas installations

The available mapped data on existing offshore oil and gas installations in the wider region indicate that the nearest identified installations are located at a distance of approximately 150 km or more from the proposed location of the 'Asopos-1', concentrated mainly along the Italian coast and in more remote parts of the Adriatic and the central Mediterranean. No comparable operational offshore oil and gas installations have been identified in the immediate vicinity of the area where the exploratory well 'Asopos-1'



Figure 10-10: Offshore oil and gas installations (source: EMODnet)

Potential cumulative interactions with other offshore oil and gas exploration and/or production activities may include atmospheric emissions, underwater noise, vessel traffic, discharges at sea and interactions during emergency response operations. In practice, these routes are not expected to result in significant cumulative impacts, given the considerable distance separating the nearest identified installations from the location of the 'Asopos-1' exploration well. The work involved in the 'Asopos-1' exploration well will be of short duration and will be limited exclusively to exploration, without production testing, gas flaring, permanent installations, subsea production infrastructure, etc. Any overlap in terms of emissions, underwater noise, vessel activity

or marine discharges with existing offshore oil and gas activities is therefore expected to be very limited, temporary and insignificant.

Similarly, it is considered unlikely that any potential synergistic effects will arise, as operational pressures from existing offshore oil and gas installations are not expected to overlap spatially with the area where the exploratory drilling operations for 'Asopos-1' in such a way as to affect the same receptors simultaneously. Consequently, no significant cumulative or synergistic impact is anticipated in relation to existing offshore oil and gas activities.

### 10.3.7 Offshore wind energy, ocean energy and other offshore renewable energy sources

Renewable energy projects in the open sea, in particular offshore wind energy, are considered to be reasonably foreseeable activities in the wider Ionian Sea and the Greek maritime area. Greece has established a specific regulatory framework for the development of offshore wind farms under Law 4964/2022, under which EDEYEP has been designated as the authority responsible for the planning and management of the development programme, as well as for the designation of Organised Development Areas for Offshore Wind Farms (POAYAP). The draft National Programme for the Development of Offshore Wind Farms (EP-YAP), which was drawn up by EDEYEP and is accompanied by a Strategic Environmental Assessment (SEA, LDK, 2023), identifies a series of initially assessed POAYAPs for medium- and long-term development. In the Ionian Sea, this includes the Diapontia Islands area, which is among the potential areas identified for medium-term development in the draft programme. It should be noted, however, that although the public consultation process for this EIA has been completed and the relevant recommendations regarding environmental conditions have been issued, the relevant Joint Ministerial Decision (JMD) for approval is still pending, which means that the POAYAPs are not certain to be among the final options when and if it is issued.

This Special Area of Conservation is situated north-west of Corfu and is relevant to the Project, given its proximity to the location of the 'Asopos-1' and its potential interaction with existing maritime uses in the wider region of Corfu and the northern Ionian Sea. The area was identified in the EP-YAP plan as a potential site for the development of offshore wind farms; however, as mentioned above, it is not an operational or licensed offshore wind farm.

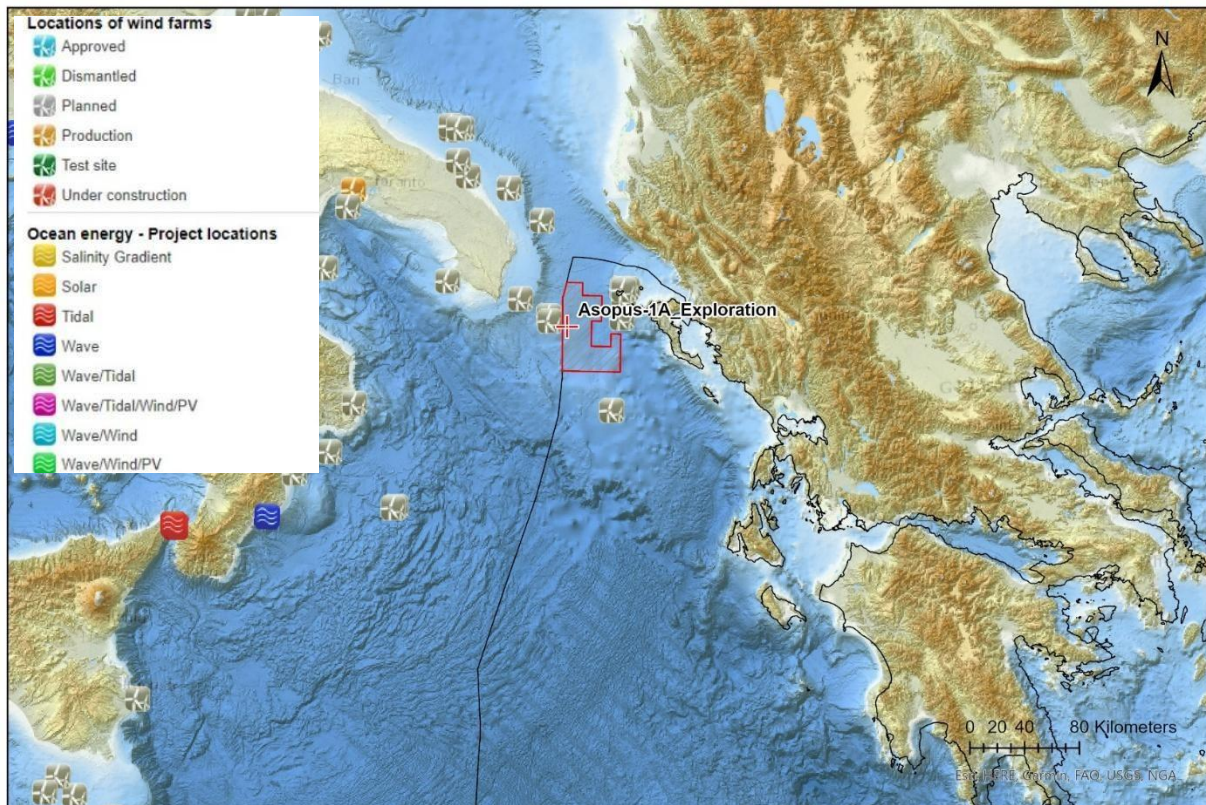
At the time of the assessment, the NDP-OWF had not yet been formally approved, and the subsequent stages required to define specific OWFODAs, allocate development capacity, select developers through a competitive process and obtain project authorisation had not been completed.

Consequently, and overall, there is no sufficiently defined or approved offshore wind energy project in the area of the 'Asopos-1', for which it could reasonably be expected that its construction or operation would overlap with the approximately 90-day exploratory drilling campaign.

The offshore wind farm in the Diapontia Islands remains at the planning stage – initially involving the selection of a broader development area – and the exact boundaries, its design, licensing, contractor and construction programme have not yet been finalised; consequently, the likelihood of temporal and spatial overlap with the Project is currently considered to be zero.



The possibility of cumulative impacts from offshore wind energy projects in adjacent Italian waters has also been examined; such impacts would mainly concern navigation, vessel traffic, fishing, underwater noise and the coordination of emergency response. Given the geographical distance from the Project and the absence of any identified construction or operational activities expected to overlap with the Project period, no significant cumulative or synergistic impacts are anticipated. Most other mapped offshore wind farm and ocean energy projects are located considerably further away, mainly along the Italian coastline and elsewhere in the central Mediterranean.



**Figure 10-11: Offshore wind farms and marine energy projects (Source: EMODnet)**

As no existing or even under-construction offshore wind farm or marine energy project has been identified in the immediate vicinity of the Project, no current cumulative interaction is expected. Should offshore renewable energy projects proceed in the wider area in the future, potential cumulative impacts may arise in relation to vessel traffic, seabed disturbance, underwater noise, the displacement of fishing activities, maritime spatial planning, the coordination of emergency response, and visual or navigational aspects.

Potential cumulative impacts could arise in the future if construction activities for offshore renewable energy sources – such as seabed preparation, cable laying or wind turbine foundation works – were carried out simultaneously with exploratory drilling or other offshore activities, with potential impacts on marine fauna, fisheries and shipping. However, based on the current status of the mapped projects and the short duration of the work involved in the ‘Asopos-1’ exploratory drilling ‘Asopos-1’, no significant cumulative or synergistic impacts are anticipated at this stage in relation to offshore renewable energy projects.

### 10.3.8 Port activities in Igoumenitsa and land-based support base

The Port of Igoumenitsa is an established international passenger and commercial port. The Project will utilise the existing port infrastructure as a temporary land-based base for mobilisation, resupply, waste disposal, equipment storage, administrative functions and demobilisation – activities which will take place within an existing operational port environment where similar transport, storage, cargo handling and logistics activities are routinely carried out.

The Project will not require any new permanent port infrastructure, port expansion, dredging, land reclamation or upgrades/works to utility networks. Waste will be managed through the Project's Waste Management Plan and by suitably licensed contractors, and not through municipal waste collection or treatment systems. Consequently, the cumulative impacts on port traffic, port infrastructure, cargo handling, vehicle movements, energy and telecommunications networks, as well as environmental infrastructure (including waste transport), are expected to be negligible to minor and temporary.

Potential synergistic impacts may arise when the Project's supply chain coincides with peak periods in ferry operations, commercial freight movements, tourism-related port traffic or other temporary port activities. These interactions will mainly concern operational coordination, traffic management and temporary congestion, rather than long-term environmental impacts, whilst no significant synergistic effect is expected from the port's usual management and planning procedures.

### 10.3.9 Military exercise areas and restricted-access maritime zones

Military exercise areas and temporary restricted-access maritime zones are relevant to offshore activities, as they may impose temporary restrictions on navigation or offshore activities. According to information provided by the Hellenic Navy Hydrographic Service, there are no permanently designated exercise areas, nor are there any temporary restricted-access or exclusion zones currently in force via NAVTEX broadcasts and/or Notices to Mariners (NtMs) within the boundaries of Section 2.

Consequently, no cumulative interaction between the Project and the military exercise areas is currently anticipated. Should temporary military restrictions be imposed during the drilling operations, any potential interactions will be addressed through standard maritime coordination procedures and operational planning. No significant cumulative or synergistic effects are anticipated under current conditions.

### 10.3.10 Combined synergistic effects on shared receptors

In addition to the cumulative impacts specifically related to the activity, the assessment examined whether multiple pressures could be exerted simultaneously on the same receptor.

#### Marine fauna

Potential synergistic factors include the combined effect of underwater noise from the floating drilling unit, the dynamic positioning system, support vessels and existing commercial shipping, combined with the presence of vessels, lighting and temporary disturbance. These pressures may lead to temporary avoidance behaviour by sensitive marine species, particularly marine mammals and sea turtles. However, given the absence of noise from pile driving or long-term construction noise, the temporary nature of the drilling campaign and the offshore location of the well, the likelihood of significant cumulative effects is limited.

### Air quality and climate change

Potential cumulative effects relate to the combined emissions from the floating drilling rig, support vessels, helicopters, port activities and existing regional shipping, which collectively contribute to regional air pollutant loads and global greenhouse gas emissions. However, the project's emissions are temporary, occur offshore and are dispersed under open-sea weather conditions.

### Users of maritime transport

Potential synergistic effects may arise where the temporary safety zone, the movements of project vessels, commercial shipping, fishing activities and recreational boating occur simultaneously. These impacts will be managed through maritime notifications, coordination with the relevant authorities and standard vessel traffic procedures. Given that the safety zone will be of limited size and the operational period short, the combined impacts on access and navigation are expected to be minor.

Overall, the Project is likely to interact cumulatively with existing shipping, fishing, offshore routes, port logistics, subsea infrastructure and foreseeable offshore energy developments, with potential synergistic effects relating primarily to underwater noise, vessel traffic, atmospheric emissions and the temporary displacement of fishing activities. However, given the temporary nature of the exploratory drilling campaign, the absence of permanent offshore infrastructure, the limited spatial footprint, the use of existing logistics infrastructure and the implementation of mitigation and management measures, the Project is not expected to cause significant cumulative or synergistic impacts. The remaining cumulative and synergistic impacts are assessed as negligible to minor, local, temporary and reversible.

## 10.4 Assessment of transboundary environmental impacts

In accordance with the Espoo Convention, the UNECE Practical Guide on the Implementation of the Espoo Convention and the EU Directive on Environmental Impact Assessment (Directive 2011/92/EU, as amended by Directive 2014/52/EU), the assessment adopted a precautionary approach when evaluating potential transboundary impacts. Should the competent authority consider that the Project is likely to cause significant adverse transboundary impacts, or should a potentially affected Party request to participate, the procedures for formal notification, exchange of information, consultation and public participation provided for in the Espoo Convention shall apply before any final decision on the Project is taken. This will ensure that all potentially affected Parties have an adequate opportunity to examine the environmental information, submit comments and participate in the decision-making process.

### 10.4.1 Geographical boundaries of the area of operation

The 'Asopos-1' exploration well is located within Area 2 of the Greek Exclusive Economic Zone (EEZ) in the northern Ionian Sea, under Greek jurisdiction. The Project comprises both offshore and onshore components, including offshore drilling operations carried out by the Floating Drilling Unit, maritime logistics between the drilling site and the Port of Igoumenitsa, helicopter transfers between Corfu International Airport and the floating drilling unit, as well as the temporary logistics support facilities that have been set up within the Port of Igoumenitsa.



The offshore operations area is situated in the immediate vicinity of the internationally agreed maritime boundary between Greece and Italy. The drilling site is situated approximately 3.16 km (1.71 nautical miles) east of the boundary of the Greece–Italy Exclusive Economic Zone (EEZ), which makes Italy the nearest potentially affected party under the Espoo Convention.

The nearest Italian coastline is Punta Ristola (Santa Maria di Leuca) in the region of Apulia, which is situated approximately 54.9 km (29.7 nautical miles) west of the proposed drilling location. The nearest Greek mainland is the western coast of the island of Othoni, approximately 44.3 km (23.9 nautical miles) from the drilling site. Logistical support for the offshore operations will be provided from the port of Igoumenitsa, which is situated approximately 129.4 km from the drilling site by sea, whilst helicopter transfers will take place between Corfu International Airport and the mobile drilling unit (MODU), a distance of approximately 81.9 km as the crow flies.

The geographical scope of the transboundary assessment extends beyond the immediate footprint of the Project and takes into account the wider marine environment of the northern Ionian Sea, including the adjacent Italian EEZ. Marine currents, atmospheric dispersion, vessel movements and accidents are not confined by administrative boundaries. Consequently, the assessment examines both the direct and indirect pathways through which the Project's activities could potentially affect environmental receptors located within Italian jurisdiction.

Given the relatively short distance from the international maritime border, transboundary aspects have been integrated throughout the EIA, adopting a precautionary and conservative approach, despite the expectation that the Project's normal activities will remain at a highly local level.

A statutory safety zone of 500 m will be established around the floating drilling unit throughout the duration of drilling operations and the decommissioning of the well, in accordance with the United Nations Convention on the Law of the Sea (UNCLOS), applicable Greek legislation and internationally accepted safety practices on the high seas. The safety zone will be centred on the drilling rig and will remain entirely within Greek jurisdiction. Access to the exclusion zone will be restricted to authorised Project vessels and personnel engaged in drilling operations, logistical support, emergency response or regulatory inspections.

Prior to the commencement of operations, the relevant authorities will issue appropriate Notices to Mariners, navigation warnings and updates to hydrographic publications, in order to inform merchant vessels, fishing vessels and other maritime users regarding the temporary exclusion zone. The vessel traffic management procedures to be implemented as part of the Project will ensure safe interaction with existing shipping routes and minimise disruption to international shipping.

The safety zone will cover only a small area compared with the surrounding marine environment and will apply only for the duration of the drilling and abandonment works. Consequently, no significant restrictions on international shipping or fishing activities within Italian waters are expected.

## 10.4.2 Expected transboundary environmental impacts

The assessment systematically examined all possible pathways through which the Project's activities could cause transboundary environmental impacts, taking into account the location of the Exploration Well at a distance of approximately 3.16 km from the boundaries of the Greek-Italy, the temporary nature of the drilling campaign, the characteristics of the host environment, and the natural processes governing the transport

and dispersion of pollutants in the marine and atmospheric environments. The assessment also took into account the nature, magnitude, spatial extent, duration and reversibility of the potential impacts, as well as the built-in mitigation measures included in the Project's design.

The environmental impacts associated with the Project are primarily short-term and temporary, reflecting the exploratory nature of the activity. The impacts are limited to the duration of mobilisation, drilling, well abandonment and demobilisation, and include temporary underwater noise, gas emissions during operations, vessel traffic, limited disturbance to the seabed, routine marine discharges and temporary occupation of the drilling site. These impacts will cease once drilling operations have been completed and the floating drilling unit has been removed.

#### 10.4.2.1 Seawater quality

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Routine discharges include drilling fluids – water-based muds and drilling cuttings, cooling water, desalination brine, ballast water, sanitary effluent, food waste and other permitted operational discharges managed in accordance with applicable international and national requirements.

The assessment took into account the physical and chemical characteristics of these discharges, as well as the prevailing hydrodynamic conditions, dilution and dispersion processes. These materials are discharged in accordance with the applicable regulatory requirements and undergo rapid dilution and dispersion within the receiving marine environment.

Numerical modelling of drilling discharges into the water column / seawater predicts a relatively extensive but temporary dispersion area which, in some cases, may exceed the distance between the drilling site and the Italian EEZ, as mentioned previously in the relevant sections presenting the cuttings dispersion model. However, this scenario represents the maximum cumulative area in which a single cell of the model exceeded the control limit at any point during the 45-day simulation. It does not represent a continuous impact, nor does it represent an environmental burden.

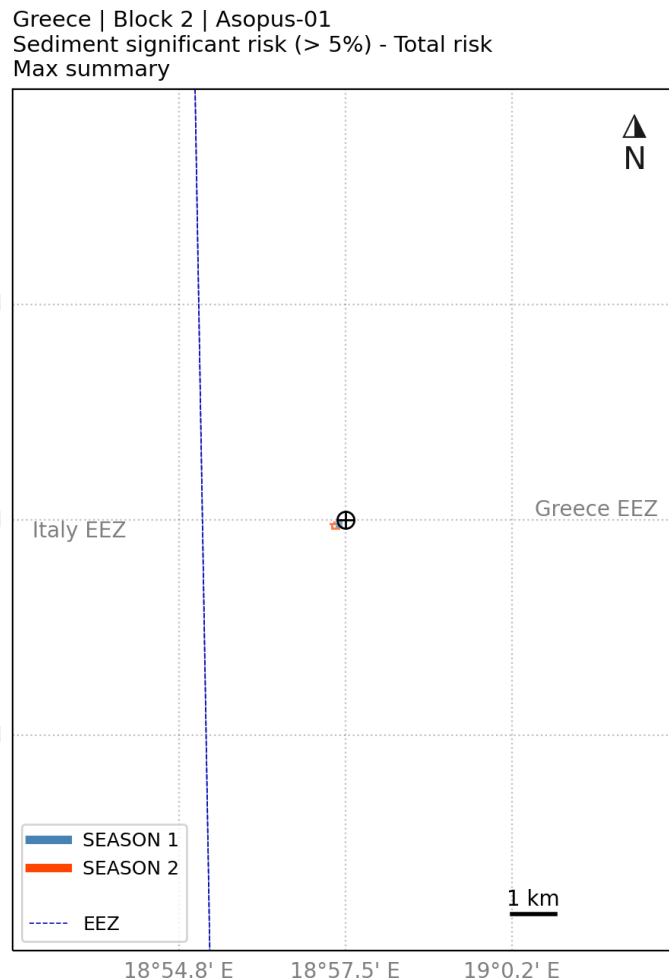
Any such impact is expected to be temporary, reversible and limited to the discharge period and the short dispersion phase following discharge. The modelling concludes that environmental risks in the water column are expected to cease within a few days after the end of discharges from the well. Overall, there may be a temporary transboundary impact on marine water quality; however, this is expected to be short-term, be confined to the water column and not be associated with persistent contamination of sediments or long-term impacts on Italian waters.

#### 10.4.2.2 Seabed

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Disturbance to the seabed has been assessed in relation to the installation of the riser, well drilling, cementing operations, the disposal of permitted drill cuttings and the temporary placement of subsea equipment. These activities result in an extremely localised physical disturbance confined to the immediate vicinity of the well site. The resuspension of sediments caused by drilling and the jetting of water to install the riser is expected to settle rapidly near the wellhead, whilst no dredging, dredging of the seabed or permanent infrastructure on the seabed.

Numerical modelling during drilling indicates that no transboundary impacts on seabed sediments within the Italian EEZ are expected. The predicted significant sediment risk is extremely localised around the discharge point, with a maximum extent of approximately 283 m during Season 1 (October to March) and 397 m during Season 2 (April to September). The simulated exceedances of the sediment sorting limit remained within the Greek EEZ in both scenarios assessed.



**Figure 10-12: Cumulative simulated exceedances of the sediment sorting limit in relation to the boundaries of the Greek and Italian EEZs**

Consequently, no significant cross-border impacts on seabed morphology or benthic habitats are anticipated. Overall, no significant cross-border impact on Italian seabed sediments is anticipated.

#### 10.4.2.3 Underwater noise

Sound propagates effectively in the marine environment and may affect highly mobile marine species capable of crossing national maritime borders. Sources of noise include dynamic positioning thrusters, drilling equipment, support vessel operations, ROV activities and vertical seismic profiling (VSP).

The assessment took into account the temporary and intermittent nature of these activities, the relatively low noise levels during drilling operations compared with other offshore activities, and the mobility of marine fauna. Although individual animals may temporarily avoid the immediate vicinity of the drilling rig, no population-level impacts or significant transboundary impacts are anticipated. The underwater noise

generated during drilling operations attenuates with distance and is not expected to cause biologically significant impacts on a transboundary scale.

#### 10.4.2.4 Air quality

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Atmospheric emissions have been identified as a potential transboundary pathway, as combustion emissions from the floating drilling unit, support vessels, helicopters and onshore supply activities may be dispersed over significant distances, depending on prevailing meteorological conditions. The assessment took into account emissions of greenhouse gases and other atmospheric pollutants, including nitrogen oxides, sulphur oxides, carbon monoxide and particulate matter.

The exploratory drilling campaign will be temporary, and the main sources of emissions will be located offshore, at a considerable distance from coastal receptors. Emissions from the floating drilling rig, support vessels and helicopters will disperse rapidly over the open sea under prevailing meteorological conditions, reducing the likelihood of measurable changes in air quality beyond the immediate operational area. Furthermore, emission levels are limited by the short duration of the drilling campaign, the use of marine fuels that comply with current sulphur content requirements, and the absence of regular combustion sources, such as gas flaring, gas venting or combustion sources associated with production. Consequently, no significant transboundary impacts on air quality are expected.

Greenhouse gas emissions will gradually contribute to global climate change, but do not cause a discernible or measurable impact on air quality in the territory of a neighbouring state.

#### 10.4.2.5 Maritime and air traffic

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The project's vessels will operate within an area used by international commercial shipping in the northern Ionian Sea. Activities include the mobilisation (mob) and demobilisation (de-mob) of the floating drilling unit, the routine operations of supply vessels, the activities of standby vessels and the occasional presence of specialised support vessels. Temporary interactions with existing shipping lanes will be managed through the establishment of the 500-metre safety zone required by law, Notices to Mariners, NAVTEX broadcasts and standard maritime navigation procedures.

Given that the movements of the vessels will be temporary and will represent a minor addition to existing commercial shipping in the northern Ionian Sea, no significant cross-border impacts on international shipping are expected.

Helicopter flights include regular crew rotations, the delivery of critical equipment and emergency flights between Corfu International Airport and the offshore drilling rig. The frequency of flights is expected to remain relatively low and will generally follow established air routes and operational procedures. Helicopter flights will be limited in number, short in duration and directed exclusively to the offshore drilling unit. Consequently, helicopter flights are not expected to cause any transboundary environmental impacts.

#### 10.4.2.6 Waste generation and management

All waste streams generated in the offshore area will be sorted on board, temporarily stored, transported to the onshore support base at the Port of Igoumenitsa, and subsequently transported by licensed contractors to authorised treatment, recovery or disposal facilities, in accordance with the Project's Waste Management Plan and the applicable legislation. There will be no deliberate discharge of waste beyond the permitted operational discharges regulated by the MARPOL Convention, and no cross-border transport of waste from the Project is envisaged. Consequently, routine waste management activities are not expected to cause any transboundary environmental impacts.

#### 10.4.2.7 Accidental hydrocarbon spill

The main mechanism through which transboundary environmental impacts could arise would be via low-probability accidental events, in particular a significant hydrocarbon spill. Such scenarios have been assessed separately using specific oil spill modelling presented in Chapter 9. Although the probability of accidental events is very low, the assessment took into account scenarios involving marine diesel spills, chemical spills and loss of control of the wells, recognising that under certain combinations of wind, waves and currents, pollutants could potentially be carried beyond the Greek EEZ. Consequently, the scenarios were assessed separately on the basis of a precautionary approach, supported by oil spill modelling where appropriate, and taking into account the Project's preventive measures, well integrity systems, emergency response arrangements and the oil spill contingency plan. These assessments take into account potential spill trajectories, prevailing oceanographic conditions and response capabilities in accordance with recognised international practice.

With regard to the scenario of an instantaneous surface spill of marine gas oil (MGO) presented in section 10.2.3.1.1, the modelling indicates that any potential transboundary impacts would be limited and short-term. The movement of oil on the surface may occur in different directions depending on seasonal winds and currents; however, the highest probability of occurrence remains close to the site of the spill, and the affected area is limited due to the rapid degradation and evaporation of MGO.

Coastal pollution is predicted as a possibility outside Greek waters, with a low probability. In Phase 1, coastal pollution may occur in five countries between Croatia and Greece, whilst in Phase 2 it may occur in four countries. The highest predicted probability of coastal pollution is observed in Italy, reaching 5 per cent in Season 1 and 12.2 per cent in Season 2. The shortest predicted time to reach the coast is 2.8 days in Italy during Season 1. In all the above cases, the potential pollution at the percentages mentioned is expected only if no mitigation measures are taken, which in practice cannot happen, as the regulatory framework imposes a strong legal obligation to draw up an Emergency Response Plan (ERP), which must be submitted to the competent authorities for assessment and approval.

Overall, the MGO surface spill scenario is likely to cause limited cross-border impacts; however, these will be short-term, of short duration and significantly less severe than scenarios involving a prolonged release of hydrocarbons.

# 11 Addressing environmental and social impacts

## 11.1 Introduction

The environmental and social impact assessment presented in Chapter 10 identified and evaluated the potential environmental and social impacts associated with the proposed exploration drilling programme. Based on the findings of that assessment, a range of measures has been developed to prevent, minimise and manage adverse impacts throughout the Project lifecycle.

Wherever practicable, environmental and social considerations have been incorporated into the Project design through embedded mitigation measures. These are complemented by operational controls and good management practices that will be implemented during Project execution to further prevent or minimise potential impacts.

In addition to the mitigation measures for routine Project activities, this chapter presents the key prevention and mitigation measures applicable to major accident hazards, measures to enhance the Project's resilience to climate change, and an overview of the Emergency Response Plan (ERP)<sup>67</sup>.

The implementation and effectiveness of these measures will be verified, where appropriate, through the Environmental Monitoring Programme (EMP) presented in Chapter 12.

## 11.2 Proposed measures for normal / routine project activities

### 11.2.1 Proposed measures during drilling preparation and mobilisation phase

The measures for the prevention, minimisation and management of potential environmental and social impacts during the drilling preparation and mobilisation phase are presented in Table 11-1.

During this phase, activities will be undertaken in a manner that minimises environmental and social impacts through the implementation of embedded design measures, operational controls and good management practices. The mitigation measures (MM1) apply to the establishment of the temporary logistics base, installation of the temporary helicopter hangar, mobilisation of the Mobile Offshore Drilling Unit (MODU), support vessels, personnel and equipment, and completion of the pre-drilling activities.

<sup>67</sup> Energean Hellas Ltd, Drilling Emergency Response Plan. Document No: GRC-BL2-PL-HSE-0004

**Table 11-1: Proposed mitigation measures for potential adverse environmental and social impacts during the drilling preparation and mobilisation phase of the project**

| ENVIRONMENTAL PARAMETERS                 | OBJECTIVE OF MEASURE                                          | MITIGATION MEASURES DURING DRILLING PREPARATION & MOBILISATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------------|---------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Climatic and Bioclimatic Characteristics | Minimise greenhouse gas emissions and air pollutant emissions | 55. Each Project Contractor shall maintain all machinery, vessels, and vehicles used in the Project according to manufacturer specifications to reduce exhaust emissions. Maintenance shall be carried out by the relevant contractor/owner in accordance with manufacturer schedules, at licensed onshore facilities where practicable.                                                                                                                                                                                                                  |
|                                          |                                                               | 56. The MODU and all support vessels shall comply with the requirements of MARPOL 73/78 Convention, Annex VI "Regulations for the Prevention of Air Pollution from Ships". Annex VI regulates emissions of ozone-depleting compounds, nitrogen oxides (NOX), sulfur oxides (SOx) and volatile organic compounds (VOCs).                                                                                                                                                                                                                                   |
|                                          |                                                               | 57. Energean shall coordinate with relevant Contractors, the Port Authority and Corfu International Airport to optimise support vessel and helicopter logistics through careful voyage planning, taking into account rig operational requirements, so as to minimise the number of vessel trips, reduce the duration of activities within the project area, and avoid unnecessary engine operation and idling, to the extent achievable within the operational constraints of each party involved.                                                        |
|                                          |                                                               | 58. Energean shall assess, in coordination with the Port of Igoumenitsa operator and relevant vessel operators, the feasibility of using existing shore-power facilities for Project vessels while alongside. Shore power may be used where existing infrastructure is available and compatible with the vessel, and where the necessary technical, safety, operational and commercial arrangements have been agreed between the relevant parties. The Project does not include installation or substantial upgrading of port shore-power infrastructure. |
|                                          |                                                               | 59. Use LED lighting for interior lighting, where practicable, and avoid unnecessary operation of external lighting.                                                                                                                                                                                                                                                                                                                                                                                                                                      |



| ENVIRONMENTAL PARAMETERS                                 | OBJECTIVE OF MEASURE                                                                | MITIGATION MEASURES DURING DRILLING PREPARATION & MOBILISATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Morphological and Landscape Characteristics              | Minimise impacts on landscape characteristics, visual amenity and seabed morphology | 60. The Project shall use existing facilities within the Port of Igoumenitsa and Corfu International Airport. No new permanent onshore or offshore infrastructure, dredging, land reclamation or quay modifications shall be required. All activities shall remain within designated operational areas.                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                          |                                                                                     | 61. Onshore Project support activities at the Port of Igoumenitsa and Corfu International Airport shall be undertaken within the areas allocated or agreed for Project use by the relevant facility operator. Project equipment, materials, vehicles and wastes shall be stored, handled and parked only within designated areas, except when being transported in accordance with applicable logistics and waste-management arrangements. Unauthorised disposal or storage outside the designated Project areas shall be prohibited.                                                                                                                                                     |
|                                                          |                                                                                     | 62. The Project shall use the existing surfaced areas of the onshore logistics base, and no additional permanent impermeable surfacing is planned. If additional surfacing is subsequently required for safe Project operations, it shall be limited to the minimum necessary extent within the area allocated for Project use and shall be subject to prior agreement with the Port operator and any applicable approvals. Any reinstatement requirements shall be agreed with the Port operator.                                                                                                                                                                                        |
| Geological, Tectonic and Soil / Sediment Characteristics | Protect soil /sediment and prevent physical disturbance and contamination           | 63. Hazardous and non-hazardous wastes generated offshore shall be segregated, stored, handled and transferred to authorised shore reception or waste-management facilities in accordance with the Project Waste Management Plan and the applicable requirements of MARPOL, the Barcelona Convention and its Offshore Protocol, and EU and Greek legislation. No solid or hazardous waste shall be intentionally discharged to the marine environment. Operational discharges, including drilling fluids and cuttings, sewage, bilge water, ballast water and food waste, shall be managed in accordance with the relevant discharge-specific measures and applicable legal requirements. |

| ENVIRONMENTAL PARAMETERS | OBJECTIVE OF MEASURE                                            | MITIGATION MEASURES DURING DRILLING PREPARATION & MOBILISATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------|-----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          |                                                                 | 64. Fuel, chemicals and hazardous materials (identified as such under applicable legislation or the relevant Safety Data Sheet) shall be stored in designated areas within the logistics base, equipped with secondary containment and segregation appropriate to the nature, quantity and spill risk of the materials. Suitable spill response materials and equipment shall be readily available at relevant storage, transfer and handling locations, in accordance with applicable site procedures and Project spill-response arrangements.                                                                |
| Air quality              | Protect ambient air quality by minimising atmospheric emissions | 65. Logistics activities, including support vessel operations and the use of onshore vehicles and machinery, shall be planned and managed by the relevant Contractors, in coordination with Energean and the facility operators, to minimise unnecessary engine operation, idling and associated atmospheric emissions, to the extent achievable within operational and scheduling constraints.                                                                                                                                                                                                                |
| Noise and Vibrations     | Minimise underwater and airborne noise and protect marine fauna | <p>66. Material handling and cargo operations at the logistics base shall be undertaken by the relevant Contractors in accordance with the Port of Igoumenitsa operating procedures, using equipment maintained in good working order to minimise unnecessary noise emissions.</p> <p>67. Support vessel operations shall be coordinated by Energean, in collaboration with the relevant Contractors, taking account of the facility operator, vessel and rig operational and safety requirements, to minimise underwater noise and unnecessary engine operation and idling, where reasonably practicable.</p> |

| ENVIRONMENTAL PARAMETERS                                 | OBJECTIVE OF MEASURE                                                              | MITIGATION MEASURES DURING DRILLING PREPARATION & MOBILISATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Seawater                                                 | Protect seawater quality                                                          | <p>68. Offshore-generated hazardous and non-hazardous wastes (identified as such under applicable legislation or the relevant Safety Data Sheet) shall be managed in accordance with the Waste Management Plan and applicable requirements of MARPOL, the Barcelona Convention and its Offshore Protocol, and EU and Greek legislation. Operational discharges shall be managed in accordance with the requirements applicable to each discharge stream, including MARPOL, the BWM Convention, the Barcelona Convention and its Offshore Protocol, and EU and Greek legislation, as relevant. Chemical selection, use and discharge shall be controlled through the Chemical Use Plan.</p> |
| Marine life, Flora, fauna, habitats, and protected areas | Protect marine fauna, and protected species by avoiding or minimising disturbance | <p>69. A Marine Mammal Mitigation Plan (MMMP) shall be prepared prior to the commencement of non-impulsive sound emissions. The MMMP shall set out the mitigation protocol to be implemented by the relevant contractors for the Vertical Seismic Profile (VSP) operation, including visual monitoring by a qualified Marine Mammal Observer (MMO) and, where applicable, Passive Acoustic Monitoring (PAM), to detect marine mammals and manage the risk of injury from impulsive noise prior to and during the VSP.</p>                                                                                                                                                                  |
|                                                          |                                                                                   | <p>70. Project-related vessels shall operate at speeds not exceeding 14 knots, or their maximum operational speed where lower, within areas identified in the Marine Mammal Mitigation Plan as having higher marine mammal presence, without compromising vessel safety or emergency response capability.</p>                                                                                                                                                                                                                                                                                                                                                                              |
|                                                          |                                                                                   | <p>71. Vessels shall maintain a safe distance from any observed marine mammal, avoid approaching it head-on, avoid crossing or waiting ahead of its direction of travel, and, where safe and practicable, steer behind its path.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| ENVIRONMENTAL PARAMETERS  | OBJECTIVE OF MEASURE                                                                                                      | MITIGATION MEASURES DURING DRILLING PREPARATION & MOBILISATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                           |                                                                                                                           | <p>72. In the event of a collision between a Project vessel and a marine mammal or sea turtle, the vessel's Master shall immediately report the incident to Energean in accordance with the Project's incident-reporting procedure. Energean shall, as soon as reasonably practicable and within any applicable regulatory timeframe, formally notify the competent environmental and other relevant authorities, as required by applicable legislation.</p> <p>73. Established transit routes shall be followed by Project vessels, where practicable, during drilling preparation and mobilisation, in accordance with standard vessel transit procedures, including applicable navigational notifications (e.g., NAVTEX) and coordination with the competent maritime authorities, and subject to the Master's discretion on safety grounds.</p> <p>74. Prior to spudding the well, a remotely operated vehicle (ROV) survey shall be conducted within a 70-metre radius of the planned wellhead location to inspect the seabed for pre-existing features or sensitivities. If any previously unidentified seabed features or sensitivities are observed within the surveyed area, the relevant authorities shall be informed.</p> |
| Spatial Planning Land Use | Minimise interference with existing onshore land uses and ensure compliance with applicable spatial planning requirements | 75. Project activities shall be conducted in accordance with the terms of existing operating permits, licenses and land use designations applicable to the Port of Igoumenitsa and Corfu International Airport, and shall not require any change to current spatial planning designations for these areas.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Maritime uses             | Minimise impacts on maritime uses                                                                                         | 76. Prior to mobilisation and demobilisation, the Operator shall ensure that the drilling contractor engages with the Hellenic Navy Hydrographic Service regarding the planned drilling and vessel-transit operations, in accordance with standard rig mobilisation procedures. The charting review and the ESSBS confirm that no submarine cables are present within 500 metres of the drilling location.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

| ENVIRONMENTAL PARAMETERS | OBJECTIVE OF MEASURE | MITIGATION MEASURES DURING DRILLING PREPARATION & MOBILISATION                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          |                      | <p>77. The main operators of cruise ships and LNG carriers identified through the Shipping and Navigation Assessment as regularly passing within or near 500 m of the site shall be provided with advance notice of the Asopus-1 operations. This notice shall supplement applicable official navigational notifications, including NAVTEX messages and Notices to Mariners, enabling the vessel operators to review or amend their passage plans, if required.</p>               |
|                          |                      | <p>78. The OIM/Master of the MODU and the Master of each support vessel shall have overriding authority and responsibility to make decisions with respect to safety and pollution prevention, in accordance with the ISM Code. The MODU and Project support vessels will comply with applicable international and national maritime legal requirements, including COLREGs (Ref. ii) and the display of appropriate lights, shapes and signals.</p>                                |
|                          |                      | <p>79. Project support vessels shall be scheduled and operationally coordinated by the Project logistics team. The owners and/or operators of the Platform Supply Vessels shall be responsible for ensuring that each vessel displays the applicable lights and marks and operates AIS, where required, and complies with applicable international, Flag-State, and coastal-State requirements, including applicable Greek legislation, COLREGs (Ref. ii) and SOLAS (Ref. x).</p> |
|                          |                      | <p>80. Subject to authorisation by the competent Greek authorities, a 500 m safety zone around the MODU will be established and notified for the duration of well operations. Unauthorised vessel access to the safety zone will be restricted in accordance with the applicable authorisation and maritime notices. The PSVs will assist the MODU in monitoring the safety zone and communicating with approaching vessels, as required, whilst on site.</p>                     |

| ENVIRONMENTAL PARAMETERS | OBJECTIVE OF MEASURE                                                                                        | MITIGATION MEASURES DURING DRILLING PREPARATION & MOBILISATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          |                                                                                                             | <p>81. Information on the establishment and duration of the safety zone, and relevant details of the operation, shall be disseminated through official maritime-safety information channels, including NAVTEX messages, navigational warnings, and, where applicable, Notices to Mariners, issued or coordinated by the Hellenic Navy Hydrographic Service in cooperation with the competent Hellenic Coast Guard authorities.</p>                                                                                                                                                                                                                                          |
| Cultural heritage        | Protect underwater cultural heritage and ensure appropriate management of chance archaeological discoveries | <p>82. All project activities shall be governed principally by Law 4858/2021 (Code of Legislation for the Protection of Antiquities and Cultural Heritage) and informed by the principles of the UNESCO Convention on the Protection of the Underwater Cultural Heritage (2001) to ensure the appropriate management and, where practicable, in situ preservation of submerged archaeological resources.</p>                                                                                                                                                                                                                                                                |
|                          |                                                                                                             | <p>83. Prior to the commencement of drilling activities, the Company shall submit to the Hellenic Ephorate of Underwater Antiquities the results of the detailed seabed survey of the marine area at the proposed Asopus-1 well location for review with respect to the potential presence of underwater cultural heritage. Based on the results of this review, and if deemed necessary by the Ephorate, an on-site underwater archaeological survey using technology (ROV, SSS, Sub bottom profiler) shall be provided in the marine area where the exploration drilling is planned to take place. The cost of conducting this survey must be covered by the Company.</p> |
|                          |                                                                                                             | <p>84. Any additional geophysical, environmental or engineering datasets acquired before drilling that provide materially relevant new seabed information for areas subject to planned Project disturbance shall be reviewed to determine whether they materially change the archaeological baseline or require further archaeological assessment and/or notification to the Competent Authority.</p>                                                                                                                                                                                                                                                                       |

| ENVIRONMENTAL PARAMETERS | OBJECTIVE OF MEASURE                    | MITIGATION MEASURES DURING DRILLING PREPARATION & MOBILISATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          |                                         | 85. Prior to the commencement of drilling activities, relevant findings and applicable requirements from the archaeological assessment shall be communicated to personnel responsible for planning, supervising or conducting Project activities involving seabed interaction.                                                                                                                                                                                                                                                                                                                                    |
|                          |                                         | 86. Project personnel engaged in activities involving seabed interaction or subsea observation shall be informed of the applicable cultural heritage controls and made aware of the procedures to follow in the event of a suspected discovery. In the event of a suspected archaeological discovery within the area of the Asopus -1 well location, the relevant Contractor shall implement the actions assigned under the Chance Find Procedure, including stopping any activity under its control that could disturb the suspected find and promptly reporting it through the defined Project reporting route. |
| Economic Activities      | Minimise impacts on economic activities | 87. The Project shall actively identify and engage with capable local and other Greek suppliers and service providers for logistics, port services, and other support activities where they meet the Project's safety, operational, and commercial requirements.                                                                                                                                                                                                                                                                                                                                                  |
|                          |                                         | 88. Regular and timely communication shall be maintained with the Hellenic Coast Guard, relevant fisheries organisations, the Port Authorities of Igoumenitsa and Corfu, Corfu International Airport operator, and other identified key stakeholders throughout mobilisation.                                                                                                                                                                                                                                                                                                                                     |
|                          |                                         | 89. Where practicable, mobilisation logistics at the Port of Igoumenitsa shall be scheduled in coordination with the Port Authority to minimise disruption to routine port commercial and passenger operations.                                                                                                                                                                                                                                                                                                                                                                                                   |
|                          |                                         | 90. Advance notification of the planned drilling campaign and its indicative timing shall be provided to local fishing associations and tourism/port stakeholders to support their own operational planning.                                                                                                                                                                                                                                                                                                                                                                                                      |



| ENVIRONMENTAL PARAMETERS | OBJECTIVE OF MEASURE                                                       | MITIGATION MEASURES DURING DRILLING PREPARATION & MOBILISATION                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------|----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Community H&S            | Protect the community health, safety and welfare of workers and the public | 91. Appropriate Personal Protective Equipment (PPE) shall be provided and used by all personnel, where required by the task and work area, in accordance with site procedures at the onshore logistics base and during marine operations. Each Project contractor and company shall be responsible for ensuring its personnel comply with the Project's PPE requirements.                                                                                                                                               |
|                          |                                                                            | 92. Each Project company and contractor shall maintain appropriate training and competence systems for its personnel and shall ensure that personnel have the skills, qualifications and risk awareness necessary to perform the activities assigned to them. Personnel shall receive project-specific briefings on marine operations, traffic management and emergency response, as applicable. Lifting operations shall be carried out by the appropriate contractor with the required competence and qualifications. |
|                          |                                                                            | 93. Emergency response drills, including fire, medical evacuation, man overboard and oil spill response exercises, shall be conducted at intervals defined in the Project and vessel emergency response procedures, and in accordance with applicable legal and Flag-State requirements.                                                                                                                                                                                                                                |
|                          |                                                                            | 94. The Onshore Traffic Management Plan shall be updated by the relevant Contractors, reviewed by Energean and the Port Authority, and used as the basis for the detailed site-specific plan to be implemented prior to mobilisation. The plan shall control vehicle movements, signage and site access.                                                                                                                                                                                                                |
|                          |                                                                            | 95. Mobilisation of the MODU and support vessels shall be coordinated with the competent maritime authorities, including the Hellenic Navy Hydrographic Service and Hellenic Coast Guard, with advance issuance of Notices to Mariners and NAVTEX broadcasts, as applicable, prior to transit and positioning.                                                                                                                                                                                                          |
|                          |                                                                            | 96. Installation of the temporary helicopter hangar and associated helicopter operations at Corfu International Airport shall comply with applicable civil aviation safety procedures and airport operator requirements and shall be coordinated with the relevant airport authorities.                                                                                                                                                                                                                                 |

| ENVIRONMENTAL PARAMETERS | OBJECTIVE OF MEASURE                                                                      | MITIGATION MEASURES DURING DRILLING PREPARATION & MOBILISATION                                                                                                                                                              |
|--------------------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Technical Infrastructure | Avoid disruption to maritime, energy, telecommunications and environmental infrastructure | 97. Project activities at the Port of Igoumenitsa shall be undertaken in accordance with the applicable Environmental Terms (Ref. No. 139663103448/08/01.06.2009, as amended and in effect at the time of this assessment). |

### 11.2.2 Proposed Measures during Drilling Operations

The measures for the prevention, minimisation and management of potential environmental and social impacts during the exploration drilling operations phase are presented in the following Table.

During the drilling operations phase, activities will be undertaken in accordance with applicable regulatory requirements, Good International Industry Practice (GIIP) and Project-specific operational procedures to minimise environmental and social impacts. The mitigation measures (MM2) presented apply to drilling of the exploration well, routine offshore operations, support vessel and helicopter activities, and the management of drilling fluids, discharges, chemicals and wastes.

**Table 11-2: Proposed mitigation measures for potential adverse environmental and social impacts during the drilling operations**

| ENVIRONMENTAL PARAMETERS                 | OBJECTIVE OF MEASURE                                          | MITIGATION MEASURES DURING DRILLING OPERATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------|---------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Climatic and Bioclimatic Characteristics | Minimise greenhouse gas emissions and air pollutant emissions | <b>MM2-72</b> Each Project Contractor shall maintain all machinery, vessels, and vehicles used in the Project according to manufacturer specifications to reduce exhaust emissions. Maintenance shall be carried out by the relevant contractor/owner in accordance with manufacturer schedules, at licensed onshore facilities where practicable.                                                                                                                                                  |
|                                          |                                                               | <b>MM2-73</b> The MODU and all support vessels shall comply with the requirements of MARPOL 73/78 Convention, Annex VI "Regulations for the Prevention of Air Pollution from Ships". Annex VI regulates emissions of ozone-depleting compounds, nitrogen oxides (NOX), sulfur oxides (SOx) and volatile organic compounds (VOCs).                                                                                                                                                                   |
|                                          |                                                               | <b>MM2-74</b> Energean shall coordinate with Contractors, the Port Authority and Corfu International Airport to optimise support vessel and helicopter logistics through careful voyage planning, taking into account rig operational requirements, so as to minimise the number of vessel trips, reduce the duration of activities within the project area, and avoid unnecessary engine operation and idling, to the extent achievable within the operational constraints of each party involved. |
|                                          |                                                               | <b>MM2-75</b> Use LED lighting for interior lighting, where practicable, and avoid unnecessary operation of external lighting.                                                                                                                                                                                                                                                                                                                                                                      |

| ENVIRONMENTAL PARAMETERS                                 | OBJECTIVE OF MEASURE                                                                | MITIGATION MEASURES DURING DRILLING OPERATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Morphological and Landscape Characteristics              | Minimise impacts on landscape characteristics, visual amenity and seabed morphology | <b>MM2-76</b> Onshore Project support activities at the Port of Igoumenitsa and Corfu International Airport shall be undertaken within the areas allocated or agreed for Project use by the relevant facility operator. Project equipment, materials, vehicles and wastes shall be stored, handled and parked only within designated areas, except when being transported in accordance with applicable logistics and waste-management arrangements. Unauthorised disposal or storage outside the designated Project areas shall be prohibited.                                                                                                                                                                                                                                        |
|                                                          |                                                                                     | <b>MM2-77</b> The Project shall use the existing surfaced areas of the onshore logistics base, and no additional permanent impermeable surfacing is planned. If additional surfacing is subsequently required for safe Project operations, it shall be limited to the minimum necessary extent within the area allocated for Project use and shall be subject to prior agreement with the Port operator and any applicable approvals. Any reinstatement requirements shall be agreed with the Port operator.                                                                                                                                                                                                                                                                           |
|                                                          |                                                                                     | <b>MM2-78</b> While conducting well operations at the Asopus-1 location, the MODU shall maintain station using a dynamic positioning system meeting IMO DP Equipment Class 3 requirements or an equivalent Class 3 notation accepted by the relevant Flag State and classification society. No anchoring is planned for routine station-keeping.                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Geological, Tectonic and Soil / Sediment Characteristics | Protect soil /sediment and prevent physical disturbance and contamination           | <b>MM2-79</b> Hazardous and non-hazardous waste (identified as such under applicable legislation or the relevant Safety Data Sheet) generated offshore shall be segregated, stored, handled and transferred to authorised shore reception or waste-management facilities in accordance with the Project Waste Management Plan and the applicable requirements of MARPOL, the Barcelona Convention and its Offshore Protocol, and EU and Greek legislation. No solid or hazardous waste shall be intentionally discharged to the marine environment. Operational discharges, including drilling fluids and cuttings, sewage, bilge water, ballast water and food waste, shall be managed in accordance with the relevant discharge-specific measures and applicable legal requirements. |
|                                                          |                                                                                     | <b>MM2-80</b> Fuel, chemicals and hazardous materials (identified as such under applicable legislation or the relevant Safety Data Sheet) stored at the onshore logistics base shall be kept in designated areas with secondary containment and segregation appropriate to the nature, quantity and spill risk of the materials. Suitable spill response materials and equipment shall be readily available at relevant storage, transfer and handling locations, in accordance with applicable site procedures and Project spill-response arrangements.                                                                                                                                                                                                                               |
|                                                          |                                                                                     | <b>MM2-81</b> Drilling fluids, cuttings and chemicals shall be managed in accordance with the Project Chemical Use Plan, Waste Management Plan, assessed discharge arrangements and applicable regulatory requirements. Water-based muds will be used, with no planned use of oil-based or non-aqueous drilling fluids. Preference is given to PLONOR substances, CHARM Gold products or OCNS Group E products, as applicable, where operationally suitable and available. Other chemicals may be used where required for planned or contingency operations, provided their suitability has been reviewed, and no suitable lower-hazard alternative is reasonably available.                                                                                                           |

| ENVIRONMENTAL PARAMETERS | OBJECTIVE OF MEASURE                                            | MITIGATION MEASURES DURING DRILLING OPERATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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|                          |                                                                 | <b>MM2-82</b> Cementing discharges shall be managed according to the Chemical Use Plan, assessed discharge arrangements, applicable regulatory requirements and, where relevant, the Waste Management Plan. Preference is given to cementing chemicals comprising PLONOR substances or classified as CHARM Gold or OCNS Group E, as applicable, where operationally suitable and available. Other chemicals may be used where required for planned or contingency cementing operations, provided their suitability has been reviewed, and no suitable lower-hazard alternative is reasonably available.                                       |
| Air quality              | Protect ambient air quality by minimising atmospheric emissions | <b>MM2-83</b> Drilling activities shall be planned and managed by the Drilling Contractor to minimise unnecessary engine operation, idling and associated atmospheric emissions.                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Noise and Vibrations     | Minimise underwater and airborne noise and protect marine fauna | <b>MM2-84</b> Material handling and cargo operations at the logistics base shall be undertaken by the relevant Contractors in accordance with applicable Port of Igoumenitsa operating procedures, using equipment maintained in good working order to minimise unnecessary noise emissions.                                                                                                                                                                                                                                                                                                                                                  |
|                          |                                                                 | <b>MM2-85</b> Routine inspection and maintenance of the drillship, support vessels, helicopters, generators and relevant noise-generating mechanical equipment shall be undertaken in accordance with applicable maintenance programmes and manufacturers' recommendations, minimising unnecessary noise and vibration emissions.                                                                                                                                                                                                                                                                                                             |
|                          |                                                                 | <b>MM2-86</b> Support vessel operations shall be coordinated by Energean, in collaboration with the relevant Contractors, taking account of the facility operator, vessel and rig operational and safety requirements, to minimise underwater noise and unnecessary engine operation and idling, where reasonably practicable.                                                                                                                                                                                                                                                                                                                |
|                          |                                                                 | <b>MM2-87</b> All Vertical Seismic Profiling (VSP) operations shall commence with a soft start (ramp-up), gradually increasing acoustic energy from low to full operational power over 20–30 minutes, in accordance with the Marine Mammal Mitigation Plan. The duration of VSP operations shall be limited to that reasonably necessary to achieve the survey objectives.                                                                                                                                                                                                                                                                    |
| Seawater                 | Protect seawater quality                                        | <b>MM2-88</b> Offshore-generated hazardous and non-hazardous wastes shall be managed in accordance with the Waste Management Plan and applicable requirements of MARPOL, the Barcelona Convention and its Offshore Protocol, and EU and Greek legislation. Operational discharges shall be managed in accordance with the requirements applicable to each discharge stream, including MARPOL, the BWM Convention, the Barcelona Convention and its Offshore Protocol, and EU and Greek legislation, as relevant. Chemical selection, use and discharge shall be controlled through the Chemical Use Plan.                                     |
|                          |                                                                 | <b>MM2-89</b> A Chemical Use Plan shall be implemented, which shall include: (i) the chemicals proposed for planned and contingency operations and relevant environmental hazard and ecotoxicity information; (ii) the purpose or purposes for which the chemicals are intended to be used; (iii) the estimated concentrations and quantities of the chemicals intended to be used; (iv) the potential routes and locations through which chemicals may be discharged to the marine environment, as applicable. Chemical selection shall take account of operational requirements and the availability of suitable lower-hazard alternatives. |

| ENVIRONMENTAL PARAMETERS | OBJECTIVE OF MEASURE | MITIGATION MEASURES DURING DRILLING OPERATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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|                          |                      | <p><b>MM2-90</b> Only chemicals required for drilling, cementing and associated well operations, together with chemicals required for routine vessel and equipment operations, will be used offshore. No well-completion, stimulation or production-related chemicals are planned.</p> <p><b>MM2-91</b> Chemical selection will follow the principles of avoid, substitute, minimise and control to reduce potential risks to seawater quality. Preference will be given to PLONOR substances and CHARM Gold or OCNS Group E products, as applicable, where operationally suitable and reasonably available. Other chemicals may be selected where required for planned or contingency operations following review of their suitability and available lower-hazard alternatives.</p> <p><b>MM2-92</b> The use and discharge of substances covered by Annex I of the Offshore Protocol shall be prohibited, except where permitted under the applicable regulatory framework. Chemicals with higher-hazard classifications will be used only where required for a specific technical function and where no suitable lower-hazard alternative is reasonably available.</p> <p><b>MM2-93</b> Pipe dope and casing dope will be treated as non-discharged chemicals, with application controlled to minimise excess material and prevent planned discharge to sea.</p> <p><b>MM2-94</b> Chemical transfer, storage and handling offshore will be controlled through containment, spill prevention, bunding, or closed drainage where applicable, trained personnel and inventory management, taking account of the nature, quantity and spill risk of the chemicals.</p> <p><b>MM2-95</b> Drilling cuttings and water-based drilling fluids discharged at the seabed during the riserless sections shall be managed in accordance with applicable regulatory requirements, including the Barcelona Convention Offshore Protocol and the relevant UNEP/MAP Common Standards and Guidelines for the use and disposal of drilling fluids and cuttings in the Mediterranean.</p> <p><b>MM2-96</b> Drilling cuttings and associated drilling fluids generated after installing the riser shall be managed in accordance with applicable regulatory requirements, including the Barcelona Convention Offshore Protocol and the relevant UNEP/MAP Common Standards and Guidelines for the use and disposal of drilling fluids and cuttings in the Mediterranean. Drilling returns shall be monitored through LWD, mudlogging and routine observation. Where cuttings or drilling returns are identified as mixed with reservoir hydrocarbons in concentrations that make them unsuitable for discharge under applicable requirements, discharge of the affected material shall cease. The affected cuttings and fluids shall be contained onboard and transferred ashore for management at an authorised facility.</p> <p><b>MM2-97</b> Sanitary wastewater (blackwater and greywater) shall be managed and discharged in accordance with the requirements of MARPOL Annex IV and applicable Greek legislation. Blackwater shall be treated in an approved sewage treatment system prior to discharge. Where applicable discharge requirements cannot be achieved, sewage shall be retained in holding tanks and either discharged once the requirements can be met or transferred to authorised shore reception facilities.</p> |

| ENVIRONMENTAL PARAMETERS | OBJECTIVE OF MEASURE | MITIGATION MEASURES DURING DRILLING OPERATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          |                      | <b>MM2-98</b> Bilge water collected from machinery spaces shall be routed to dedicated bilge holding tanks and processed through an approved oily water separator (OWS) equipped with a certified oil content monitor and automatic stopping device. Treated bilge water may only be discharged when the oil content of the undiluted effluent does not exceed 15 mg/L (15 ppm) and all other applicable MARPOL Annex I discharge conditions are met.                                                                                                                                |
|                          |                      | <b>MM2-99</b> Deck drainage from non-hazardous areas shall be discharged through the vessel drainage system. Any tainted runoff shall be contained and managed through the vessel's applicable drainage and treatment arrangements, including the oily water separator (OWS), if applicable. Where oily drainage is treated through an OWS, the oil content of any discharge shall not exceed 15 mg/L (15 ppm). Deck drainage may only be discharged to sea where permitted under applicable MARPOL, Flag State and vessel requirements and where no visible oil sheen would result. |
|                          |                      | <b>MM2-100</b> Cooling water shall be discharged through multiple outlets. The temperature difference between cooling-water intake and discharge shall not exceed 5 °C. Cooling-water discharges shall be managed in accordance with the MODU's approved systems and procedures and applicable environmental requirements. The discharge shall comprise non-contact seawater and shall not contain oil or harmful substances.                                                                                                                                                        |
|                          |                      | <b>MM2-101</b> Ballast water on the MODU and support/supply vessels shall be managed in accordance with the Ballast Water Management Convention, including the applicable provisions of Regulations B-1 and D-1/D-2, as applicable, the approved Ballast Water Management Plan, and the Ballast Water Record Book. Any ballast water management system installed on board shall be type-approved in accordance with Regulation D-3.                                                                                                                                                  |
|                          |                      | <b>MM2-102</b> Any unused, excess, or waste pipe dope, tainted rags or absorbents, and empty containers shall be collected, segregated and managed in accordance with the Project Waste Management Plan and applicable MARPOL requirements, and transferred via the supply base to authorised onshore waste-management facilities. Any accidental spills will be managed in accordance with the Project spill response procedures. Use of pipe dope shall be subject to the Chemical Use Plan, and pipe dope shall not be intentionally discharged to seawater.                      |
|                          |                      | <b>MM2-103</b> Brine streams may only be discharged where they do not contain oil or harmful substances and in accordance with applicable MARPOL requirements, Greek environmental legislation, permit conditions and vessel procedures.                                                                                                                                                                                                                                                                                                                                             |
|                          |                      | <b>MM2-104</b> Food waste shall be comminuted or ground to pass through a screen with openings no greater than 25 mm and may only be discharged in accordance with the location and operational conditions applicable to the MODU and Project vessels under MARPOL Annex V, including the applicable minimum distance from the nearest land. Food waste mixed with other waste shall not be discharged.                                                                                                                                                                              |



| ENVIRONMENTAL PARAMETERS                    | OBJECTIVE OF MEASURE                                                              | MITIGATION MEASURES DURING DRILLING OPERATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Flora, fauna, habitats, and protected areas | Protect marine fauna, and protected species by avoiding or minimising disturbance | <b>MM2-105</b> Before commencing VSP operations, certified Marine Mammal Observers (MMOs) shall conduct a pre-shooting visual search for marine mammals and sea turtles within the 500 m zone specified in the Marine Mammal Mitigation Plan. Passive Acoustic Monitoring (PAM) shall supplement visual monitoring for vocalising marine mammals during darkness or poor visibility. The duration of the pre-shooting search, ramp-up (soft-start) procedure, and the delay, shutdown and restart criteria shall be implemented in accordance with the Marine Mammal Mitigation Plan and applicable regulatory requirements.                                                                                                                                                |
|                                             |                                                                                   | <b>MM2-106</b> During VSP operations, two Marine Mammal Observers (MMOs), holding ACCOBAMS certification or an equivalent recognised qualification, shall be deployed at suitable observation points onboard the vessel to provide effective visual coverage of the 500 m mitigation zone. One or more suitably qualified PAM operators shall be provided, as required by the Marine Mammal Mitigation Plan, to implement monitoring during darkness or poor visibility. Marine mammal and sea turtle sightings, pre-shooting searches, delays, soft-starts, shutdowns and other mitigation actions shall be recorded using the applicable reporting forms and submitted in accordance with the Marine Mammal Mitigation Plan and applicable permit/reporting requirements. |
|                                             |                                                                                   | <b>MM2-107</b> All acoustic source tests shall commence with a soft-start (ramp-up), gradually increasing acoustic energy from low to full operational power over 20–30 minutes, in accordance with the Marine Mammal Mitigation Plan. If a marine mammal or sea turtle is detected within the 500 m zone before full power is reached, acoustic operations shall be suspended and shall not recommence until the applicable clearance, and restart requirements have been met.                                                                                                                                                                                                                                                                                             |
|                                             |                                                                                   | <b>MM2-108</b> If marine mammals or sea turtles are detected within the 500 m mitigation zone, acoustic operations shall be delayed until the animals have left the area and at least 20 minutes have elapsed since the last visual sighting, or for any longer period specified in the Marine Mammal Mitigation Plan.                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                             |                                                                                   | <b>MM2-109</b> In the event of a collision between a Project vessel and a marine mammal or sea turtle, the vessel's Master shall immediately report the incident to Energean in accordance with the Project's incident-reporting procedure. Energean shall, as soon as reasonably practicable and within any applicable regulatory timeframe, formally notify the competent environmental and other relevant authorities, as required by applicable legislation.                                                                                                                                                                                                                                                                                                            |
|                                             |                                                                                   | <b>MM2-110</b> Project-related vessels shall operate at speeds not exceeding 14 knots, or their maximum operational speed where lower, within areas identified in the Marine Mammal Mitigation Plan as having higher marine mammal presence, without compromising vessel safety or emergency response capability.                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                             |                                                                                   | <b>MM2-111</b> Vessels shall maintain a safe distance from any observed marine mammal, avoid approaching it head-on, avoid crossing or waiting ahead of its direction of travel, and, where safe and practicable, steer behind its path.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                             |                                                                                   | <b>MM2-112</b> No planned discharge from the MODU or Project vessels shall be made if at any point a vessel is within the Ionian Archipelago IMMA or the Nisoi Paxoi Kai Antipaxoi Kai Evryteri Thalassia Periochi (GR2230003) Natura 2000 site.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |



| ENVIRONMENTAL PARAMETERS | OBJECTIVE OF MEASURE              | MITIGATION MEASURES DURING DRILLING OPERATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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|                          |                                   | <b>MM2-113</b> Appropriate screens or equivalent protective measures shall be fitted to the drillship seawater intakes to minimise the risk of entrainment of marine flora and fauna.                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                          |                                   | <b>MM2-114</b> Light emissions shall be minimised during night-time hours, as far as practicable while maintaining safe operations and navigational requirements. Directional lighting shall be used, where practicable, to minimise light spill onto the sea.                                                                                                                                                                                                                                                                                                                                          |
|                          |                                   | <b>MM2-115</b> External lighting shall comply with applicable maritime, aviation, Flag State and operational safety requirements. Where practicable without affecting those requirements, non-essential lighting shall be positioned, directed or shielded to minimise unnecessary upward and outward light spill, particularly during bird-migration periods.                                                                                                                                                                                                                                          |
|                          |                                   | <b>MM2-116</b> Where fitted, blinds or other available screening shall be used on accommodation windows during hours of darkness, where practicable, to minimise unnecessary outward light spill, particularly during bird-migration periods.                                                                                                                                                                                                                                                                                                                                                           |
|                          |                                   | <b>MM2-117</b> Helicopter flights shall be planned and conducted by the helicopter operator in accordance with applicable aviation requirements, air-traffic-control instructions and Corfu International Airport operator procedures. Where safe and operationally practicable, flight routes and altitudes shall be selected to avoid unnecessary overflight of known bird breeding, roosting or concentration areas identified as relevant to the Project.                                                                                                                                           |
| Maritime uses            | Minimise impacts on maritime uses | <b>MM2-118</b> The OIM/Master of the MODU and the Master of each support vessel shall have overriding authority and responsibility to make decisions with respect to safety and pollution prevention, in accordance with the ISM Code. The MODU and Project support vessels will comply with applicable international and national maritime legal requirements, including COLREGs (Ref. ii) and the display of appropriate lights, shapes and signals.                                                                                                                                                  |
|                          |                                   | <b>MM2-119</b> The main operators of cruise ships and LNG carriers identified through the Shipping and Navigation Assessment as regularly passing within or near 500 m of the site shall be provided with advance notice of the Asopus-1 operations. This notice shall supplement applicable official navigational notifications, including NAVTEX messages and Notices to Mariners, enabling the vessel operators to review or amend their passage plans, if required.                                                                                                                                 |
|                          |                                   | <b>MM2-120</b> The MODU will have a vessel-specific collision risk management plan, informed by the site-specific Shipping and Navigation Assessment, to reduce the risk of collision from third-party vessels while it is restricted in its ability to manoeuvre (RAM) and engaged in well operations. The plan shall include measures to provide adequate warning time, continuous monitoring of marine traffic by competent watchkeepers using AIS, ARPA and other available navigational aids, and appropriate communications, lights, shapes and signals reflecting the MODU's operational status. |

| ENVIRONMENTAL PARAMETERS | OBJECTIVE OF MEASURE                                                                            | MITIGATION MEASURES DURING DRILLING OPERATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------|-------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          |                                                                                                 | <p><b>MM2-121</b> Project support vessels shall be scheduled and operationally coordinated by the Project logistics team. The owners and/or operators of the Platform Supply Vessels shall be responsible for ensuring that each vessel displays the applicable lights and marks and operates AIS, where required, and complies with applicable international, Flag-State, and coastal-State requirements, including applicable Greek legislation, COLREGs (Ref. ii) and SOLAS (Ref. x).</p>                                                                              |
|                          |                                                                                                 | <p><b>MM2-122</b> Subject to authorisation by the competent Greek authorities, a 500 m safety zone around the MODU will be established and notified for the duration of well operations. Unauthorised vessel access to the safety zone will be restricted in accordance with the applicable authorisation and maritime notices. The PSVs will assist the MODU in monitoring the safety zone and communicating with approaching vessels, as required, whilst on site.</p>                                                                                                  |
|                          |                                                                                                 | <p><b>MM2-123</b> Information on the establishment and duration of the safety zone, and relevant details of the operation, shall be disseminated through official maritime-safety information channels, including NAVTEX messages, navigational warnings, and, where applicable, Notices to Mariners, issued or coordinated by the Hellenic Navy Hydrographic Service in cooperation with the competent Hellenic Coast Guard authorities.</p>                                                                                                                             |
|                          |                                                                                                 | <p><b>MM2-124</b> The drillship will have an Emergency Response Plan detailing procedures to be followed in an emergency. The MODU shall also maintain Well-Specific Operating Guidelines (WSOG), informed by the applicable station-keeping, riser and emergency-disconnect analyses, defining the operating limits, alert status and actions for loss or degradation of position. Where required by the WSOG and associated MODU procedures, the Emergency Disconnect Sequence (EDS) shall be initiated to secure the well and enable the MODU to disengage safely.</p> |
|                          |                                                                                                 | <p><b>MM2-125</b> The Operator will maintain appropriate liaison with relevant fishing associations during drilling operations to communicate material changes or issues that may affect fishing activities and, where reasonably practicable, minimise interference with fishing vessels.</p>                                                                                                                                                                                                                                                                            |
| Cultural heritage        | Protect underwater cultural heritage and ensure appropriate management of chance archaeological | <p><b>MM2-126</b> During drilling operations, personnel engaged in seabed interaction or subsea observation shall remain aware of the applicable cultural heritage controls. If suspected archaeological material is identified, any activity under their control that could disturb the suspected find shall be stopped, and the discovery shall be promptly reported and managed in accordance with the Project Chance Find Procedure.</p>                                                                                                                              |

| ENVIRONMENTAL PARAMETERS | OBJECTIVE OF MEASURE                    | MITIGATION MEASURES DURING DRILLING OPERATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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|                          | discoveries                             | <p><b>MM2-127</b> No archaeological remains were identified within the immediate project footprint. However, should material of possible archaeological significance be encountered during project activities, the following Chance Find Procedure shall be implemented: • The affected activity shall be stopped to the extent necessary to avoid disturbance. • Record the location and nature of the find and apply practicable controls to avoid further disturbance. • Obtain photographic and/or video documentation of the discovery where practicable. • Inform the OIM/Master and the designated Project representative through the defined Project reporting route. • Obtain advice from an appropriately qualified maritime archaeologist where required to support notification, preliminary interpretation or the response requested by the competent authority. • The designated Project representative shall notify the Ephorate of Underwater Antiquities within the timeframe required by applicable law, permit conditions or agreed notification arrangements, providing the available relevant information. • The suspended seabed-disturbing activity shall not recommence within the affected area until authorised by the Project Operator, taking into account the OIM/Master's independent authority and any direction received from the competent authority.</p> |
|                          |                                         | <p><b>MM2-128</b> The Cultural Heritage Management Plan should be reviewed and updated where necessary if: • New archaeological discoveries are made; • Additional geophysical or seabed investigations provide new, material information relevant to the cultural heritage assessment or the planned disturbance footprint; • Project activities are modified in a manner that may affect cultural heritage resources; • New information becomes available regarding the archaeological potential of the project area.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Economic Activities      | Minimise impacts on economic activities | <p><b>MM2-129</b> The Project shall actively identify and engage with capable local and other Greek suppliers and service providers for logistics, port services, and other support activities where they meet the Project's safety, operational, and commercial requirements.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                          |                                         | <p><b>MM2-130</b> Regular and timely communication shall be maintained with the Hellenic Coast Guard, relevant fisheries organisations, the Port Authorities of Igoumenitsa and Corfu, Corfu International Airport operator, and other identified key stakeholders throughout operations.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                          |                                         | <p><b>MM2-131</b> Commencement of drilling activities shall be scheduled outside the peak tourism season, taking account of regulatory approvals, rig and vessel availability, weather, safety and operational requirements.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                          |                                         | <p><b>MM2-132</b> Relevant local stakeholders shall be provided with an appropriate contact route in the Energean website for raising Project-related concerns during drilling operations. Concerns received shall be recorded and addressed in accordance with applicable Project procedures.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                          |                                         | <p><b>MM2-133</b> Where practicable, mobilisation logistics at the Port of Igoumenitsa shall be scheduled in coordination with the Port Authority to minimise disruption to routine port commercial and passenger operations.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

| ENVIRONMENTAL PARAMETERS | OBJECTIVE OF MEASURE                                                                      | MITIGATION MEASURES DURING DRILLING OPERATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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| Community H&S            | Protect the community health, safety and welfare of workers and the public                | <b>MM2-134</b> Appropriate Personal Protective Equipment (PPE) shall be provided and used by all personnel, where required by the task and work area, in accordance with site procedures at the onshore logistics base and during marine operations. Each Project contractor and company shall be responsible for ensuring its personnel comply with the Project's PPE requirements.                                                                                                                                               |
|                          |                                                                                           | <b>MM2-135</b> Each Project company and contractor shall maintain appropriate training and competence systems for its personnel and shall ensure that personnel have the skills, qualifications and risk awareness necessary to perform the activities assigned to them. Personnel shall receive project-specific briefings on marine operations, traffic management and emergency response, as applicable. Lifting operations shall be carried out by the appropriate contractor with the required competence and qualifications. |
|                          |                                                                                           | <b>MM2-136</b> Emergency response drills, including fire, medical evacuation, man overboard and oil spill response exercises, shall be conducted at intervals defined in the Project and vessel emergency response procedures, and in accordance with applicable legal and Flag-State requirements.                                                                                                                                                                                                                                |
|                          |                                                                                           | <b>MM2-137</b> Subject to authorisation by the competent Greek authorities, the 500 m safety zone around the MODU shall be maintained during well operations and notified through applicable official maritime-safety information channels. The MODU shall maintain continuous watchkeeping using AIS, ARPA, VHF and other available navigational aids, consistent with the Shipping and Navigation Assessment.                                                                                                                    |
|                          |                                                                                           | <b>MM2-138</b> Sealed radioactive sources may be used only where required for formation-evaluation tools within specific well-logging or logging-while-drilling tools. Their use, storage and transport shall be managed by the relevant licensed contractor in accordance with applicable EEAE authorisations, Greek radiation-protection requirements and the contractor's approved radiation-safety procedures.                                                                                                                 |
|                          |                                                                                           | <b>MM2-139</b> Chemical handling shall follow the Chemical Use Plan and applicable contractor procedures, including review of relevant Safety Data Sheets, appropriate containment and segregation, and spill-prevention and response arrangements at the shore base and offshore.                                                                                                                                                                                                                                                 |
|                          |                                                                                           | <b>MM2-140</b> Helicopter transfers between Corfu International Airport and the MODU shall be conducted by the helicopter operator in accordance with applicable aviation requirements and the requirements and procedures of the Corfu International Airport operator, taking account of operational, air traffic and weather conditions, to minimise risks to third parties.                                                                                                                                                     |
| Technical Infrastructure | Avoid disruption to maritime, energy, telecommunications and environmental infrastructure | <b>MM2-141</b> Project activities at the Port of Igoumenitsa shall be undertaken in accordance with the applicable Environmental Terms (Ref. No. 139663103448/08/01.06.2009, as amended and in effect at the time of this assessment).                                                                                                                                                                                                                                                                                             |

| ENVIRONMENTAL PARAMETERS                | OBJECTIVE OF MEASURE                                                    | MITIGATION MEASURES DURING DRILLING OPERATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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| Environmental Management and Monitoring | Ensure environmental compliance and verification of mitigation measures | <b>MM2-142</b> An Environmental Monitoring Programme (EMP) shall be implemented throughout the Project to verify compliance with applicable environmental requirements and monitor the effectiveness of mitigation measures. Monitoring shall include, as appropriate, drilling discharges, seawater quality, waste management, chemical use, environmental incidents and marine fauna observations. Monitoring results shall be reviewed in accordance with the EMP, and proportionate corrective actions implemented where necessary. |

### 11.2.3 Proposed measures during decommissioning phase – site restoration

The mitigation measures (MM3) for the prevention, minimisation and management of potential environmental and social impacts during the decommissioning and site restoration phase are presented in Table 11-3.

The following general principles shall apply during the decommissioning and site restoration phase:

- The exploration well shall be plugged and abandoned in accordance with the accepted Notification of Well Operations (NoWO), applicable regulatory requirements, the approved P&A programme and Good International Industry Practice, to provide long-term well integrity and prevent unintended releases to the marine environment.
- Temporary subsea equipment deployed by the Project during the drilling campaign, including the marine riser, blowout preventer and acoustic positioning transponders, shall be recovered following completion of well operations.
- Following P&A and recovery of the temporary subsea equipment, an ROV seabed survey shall be undertaken within a 50 m radius of the well location to identify Project-related debris. Any Project-related debris identified shall be documented and managed in accordance with applicable operational and regulatory requirements.
- As the MODU will use dynamic positioning for routine station-keeping, no anchoring is planned and no anchor-recovery or associated seabed-restoration activities are anticipated.
- Project equipment, materials, chemicals and wastes remaining on the MODU and at the onshore support facilities following completion of Project use shall be removed or otherwise managed in accordance with the Project Waste Management Plan, applicable legislation and arrangements agreed with the relevant facility operator. Materials shall be reused or recycled where reasonably practicable, and wastes shall be transferred to authorised waste-management facilities.
- Temporary Project facilities, equipment, signage and operational arrangements at the Port of Igoumenitsa and Corfu International Airport shall be removed, retained or otherwise managed in accordance with arrangements agreed with the relevant facility operator. Areas used by the Project shall be left in the condition agreed with the relevant facility operator.
- Records relating to P&A, recovery of temporary subsea equipment, waste transfers and post-operation inspections shall be maintained and submitted to the competent authorities where required by applicable regulatory requirements.

**Table 11-3: Mitigation measures for potential adverse environmental and social impacts during the decommissioning and site restoration phase of the project**

| ENVIRONMENTAL PARAMETERS                                 | OBJECTIVE OF MEASURE                                                                       | MITIGATION MEASURES DURING DECOMMISSIONING & SITE RESTORATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------------------------|--------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Climatic and Bioclimatic Characteristics                 | Minimise greenhouse gas emissions and atmospheric pollutants                               | <b>MM3-32</b> Each Project Contractor shall maintain all machinery, vessels, and vehicles used in the Project according to manufacturer specifications to reduce exhaust emissions. Maintenance shall be carried out by the relevant contractor/owner in accordance with manufacturer schedules, at licensed onshore facilities where practicable.                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                          |                                                                                            | <b>MM3-33</b> The MODU and all support vessels shall comply with the requirements of MARPOL 73/78 Convention, Annex VI "Regulations for the Prevention of Air Pollution from Ships". Annex VI regulates emissions of ozone-depleting compounds, nitrogen oxides (NOx), sulfur oxides (SOx) and volatile organic compounds (VOCs).                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                                          |                                                                                            | <b>MM3-34</b> Energean shall coordinate with relevant Contractors, the Port Authority and Corfu International Airport to optimise support vessel and helicopter logistics through careful voyage planning, taking into account rig operational requirements, so as to minimise the number of vessel trips, reduce the duration of activities within the project area, and avoid unnecessary engine operation and idling, to the extent achievable within the operational constraints of each party involved.                                                                                                                                                                                                                                                                            |
| Morphological and Landscape Characteristics              | Restore the project area and prevent permanent alteration of seabed and onshore facilities | <b>MM3-35</b> Upon completion of drilling and Plug and Abandonment (P&A), temporary subsea equipment deployed by the Project shall be recovered. An ROV seabed survey shall be undertaken within a 50 m radius of the well location to identify Project-related debris. Temporary Project equipment and materials shall be removed from the onshore support facilities or otherwise managed in accordance with arrangements agreed with the relevant facility operator.                                                                                                                                                                                                                                                                                                                 |
|                                                          |                                                                                            | <b>MM3-36</b> Any temporary areas used for Project activities at the onshore logistics base shall be left in the condition agreed with the relevant facility operator following completion of Project use.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Geological, Tectonic and Soil / Sediment Characteristics | Protect soil / sediment and minimise physical and chemical disturbance                     | <b>MM3-37</b> Hazardous and non-hazardous wastes (identified as such under applicable legislation or the relevant Safety Data Sheet) generated offshore shall be segregated, stored, handled and transferred to authorised shore reception or waste-management facilities in accordance with the Project Waste Management Plan and the applicable requirements of MARPOL, the Barcelona Convention and its Offshore Protocol, and EU and Greek legislation. No solid or hazardous waste shall be intentionally discharged to the marine environment. Operational discharges, including drilling fluids and cuttings, sewage, bilge water, ballast water and food waste, shall be managed in accordance with the relevant discharge-specific measures and applicable legal requirements. |
|                                                          |                                                                                            | <b>MM3-38</b> The exploration well shall be plugged and abandoned in accordance with the accepted HEREMA Notification of Well Operations (NoWO), applicable regulatory requirements, the approved P&A programme, and Good International Industry Practice (GIIP).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                                          |                                                                                            | <b>MM3-39</b> Permanent cement barriers shall be installed and verified using methods appropriate to the barrier type and well conditions, in accordance with the accepted NoWO, approved well programme, applicable regulatory requirements and Good International Industry Practice.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                                          |                                                                                            | <b>MM3-40</b> Upon completion of the well operations, the required records and documentation shall be submitted to the competent authorities in accordance with applicable regulatory requirements.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Air quality                                              | Protect air quality by minimising atmospheric emissions                                    | <b>MM3-41</b> Logistics activities, including support vessel operations and the use of onshore vehicles and machinery, shall be planned and managed by the relevant Contractors, in coordination with Energean and the facility operators, to minimise unnecessary engine operation, idling and associated atmospheric emissions, to the extent achievable within operational and scheduling constraints.                                                                                                                                                                                                                                                                                                                                                                               |
| Noise and Vibrations                                     | Minimise underwater and airborne noise                                                     | <b>MM3-42</b> Support vessel operations shall be coordinated by Energean, in collaboration with the relevant Contractors, taking account of the facility operator, vessel and rig operational and safety requirements, to minimise underwater noise and unnecessary engine operation and idling, where reasonably practicable.                                                                                                                                                                                                                                                                                                                                                                                                                                                          |



| ENVIRONMENTAL PARAMETERS                    | OBJECTIVE OF MEASURE                                                                                        | MITIGATION MEASURES DURING DECOMMISSIONING & SITE RESTORATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Seawater                                    | Protect seawater quality                                                                                    | <b>MM3-43</b> Offshore-generated hazardous and non-hazardous wastes shall be managed in accordance with the Waste Management Plan and applicable requirements of MARPOL, the Barcelona Convention and its Offshore Protocol, and EU and Greek legislation. Operational discharges shall be managed in accordance with the requirements applicable to each discharge stream, including MARPOL, the BWM Convention, the Barcelona Convention and its Offshore Protocol, and EU and Greek legislation, as relevant. Chemical selection, use and discharge shall be controlled through the Chemical Use Plan.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Flora, fauna, habitats, and protected areas | Protect marine fauna and verify restoration of the seabed                                                   | <p><b>MM3-44</b> Project-related vessels shall operate at speeds not exceeding 14 knots, or their maximum operational speed where lower, within areas identified in the Marine Mammal Mitigation Plan as having higher marine mammal presence, without compromising vessel safety or emergency response capability.</p> <p><b>MM3-45</b> Vessels shall maintain a safe distance from any observed marine mammal, avoid approaching it head-on, avoid crossing or waiting ahead of its direction of travel, and, where safe and practicable, steer behind its path.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Maritime uses                               | Minimise impacts on maritime uses                                                                           | <p><b>MM3-46</b> The Operator will maintain appropriate liaison with relevant fishing associations during well decommissioning to communicate material changes or issues that may affect fishing activities and, where reasonably practicable, minimise interference with fishing vessels.</p> <p><b>MM3-47</b> The main operators of cruise ships and LNG carriers identified through the Shipping and Navigation Assessment as regularly passing within or near 500 m of the site shall be provided with advance notice of the Asopus-1 operations. This notice shall supplement applicable official navigational notifications, including NAVTEX messages and Notices to Mariners, enabling the vessel operators to review or amend their passage plans, if required.</p> <p><b>MM3-48</b> The OIM/Master of the MODU and the Master of each support vessel shall have overriding authority and responsibility to make decisions with respect to safety and pollution prevention, in accordance with the ISM Code. The MODU and Project support vessels will comply with applicable international and national maritime legal requirements, including COLREGs (Ref. ii) and the display of appropriate lights, shapes and signals.</p> <p><b>MM3-49</b> Project support vessels shall be scheduled and operationally coordinated by the Project logistics team. The owners and/or operators of the Platform Supply Vessels shall be responsible for ensuring that each vessel displays the applicable lights and marks and operates AIS, where required, and complies with applicable international, Flag-State, and coastal-State requirements, including applicable Greek legislation, COLREGs (Ref. ii) and SOLAS (Ref. x).</p> <p><b>MM3-50</b> Subject to authorisation by the competent Greek authorities, a 500 m safety zone around the MODU will be established and notified for the duration of well operations. Unauthorised vessel access to the safety zone will be restricted in accordance with the applicable authorisation and maritime notices. The PSVs will assist the MODU in monitoring the safety zone and communicating with approaching vessels, as required, whilst on site.</p> <p><b>MM3-51</b> Information on the establishment and duration of the safety zone, and relevant details of the operation, shall be disseminated through official maritime-safety information channels, including NAVTEX messages, navigational warnings, and, where applicable, Notices to Mariners, issued or coordinated by the Hellenic Navy Hydrographic Service in cooperation with the competent Hellenic Coast Guard authorities.</p> |
| Cultural Heritage                           | Protect underwater cultural heritage and ensure appropriate management of chance archaeological discoveries | <p><b>MM3-52</b> No archaeological remains were identified within the immediate project footprint. However, should material of possible archaeological significance be encountered during project activities, the Chance Find Procedure shall be implemented.</p> <p><b>MM3-53</b> Any discoveries of potential archaeological significance shall be documented in accordance with the Chance Find Procedure and reported to the competent cultural heritage authorities. Consultation with the Ephorate of Underwater Antiquities shall be undertaken as required regarding any further assessment or protective measures.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Economic Activities                         | Minimise impacts on economic activities                                                                     | <b>MM3-54</b> The Project shall actively identify and engage with capable local and other Greek suppliers and service providers for logistics, port services, and other support activities where they meet the Project's safety, operational, and commercial requirements.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |



| ENVIRONMENTAL PARAMETERS                | OBJECTIVE OF MEASURE                                                                        | MITIGATION MEASURES DURING DECOMMISSIONING & SITE RESTORATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                         |                                                                                             | <p><b>MM3-55</b> Regular and timely communication shall be maintained, as required, with the Hellenic Coast Guard, relevant fisheries organisations, the Port Authorities of Igoumenitsa and Corfu, the Corfu International Airport operator and other identified key stakeholders throughout demobilisation, including notification of rig departure and cessation of the Project activities for which the safety zone was established.</p> <p><b>MM3-56</b> Temporary Project facilities and equipment at the Port of Igoumenitsa and Corfu International Airport shall, following completion of Project use, be removed, retained or otherwise managed in accordance with arrangements agreed with the relevant facility operator.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Community H&S                           | Protect the community health, safety and welfare of workers and the public                  | <p><b>MM3-57</b> Appropriate Personal Protective Equipment (PPE) shall be provided and used by all personnel, where required by the task and work area, in accordance with site procedures at the onshore logistics base and during marine operations. Each Project contractor and company shall be responsible for ensuring its personnel comply with the Project's PPE requirements.</p> <p><b>MM3-58</b> Each Project company and contractor shall maintain appropriate training and competence systems for its personnel and shall ensure that personnel have the skills, qualifications and risk awareness necessary to perform the activities assigned to them. Personnel shall receive project-specific briefings on marine operations, traffic management and emergency response, as applicable. Lifting operations shall be carried out by the appropriate contractor with the required competence and qualifications.</p> <p><b>MM3-59</b> Emergency response drills, including fire, medical evacuation, man overboard and oil spill response exercises, shall be conducted at intervals defined in the Project and vessel emergency response procedures, and in accordance with applicable legal and Flag-State requirements.</p> <p><b>MM3-60</b> Waste contractor collections and any removal or dismantling of temporary Project facilities and equipment shall be scheduled and coordinated with the relevant port and airport facility operators to minimise disruption and risks to other facility users.</p> |
| Technical Infrastructure                | Avoid disruption to existing infrastructure and navigation routes during project activities | <p><b>MM3-61</b> Decommissioning and demobilisation activities shall be planned and coordinated with the relevant port and airport facility operators. Activity timing and arrangements shall, where reasonably practicable, be adjusted to minimise disruption to other facility users, without compromising safety, emergency-response, asset integrity or operational requirements.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Environmental Management and Monitoring | Ensure environmental compliance and verification of mitigation measures                     | <p><b>MM3-62</b> An Environmental Monitoring Programme (EMP) shall be implemented throughout the Project to verify compliance with applicable environmental requirements and the effectiveness of mitigation measures. Monitoring shall include, as appropriate, drilling discharges, seawater quality, waste management, chemical use, environmental incidents and marine fauna observations. Monitoring results shall be reviewed in accordance with the EMP, and proportionate corrective actions shall be implemented where necessary.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

## 11.3 Proposed measures for non-routine operations

### 11.3.1 Contingency activities triggered by unfavourable operational circumstances

If technical or operational issues arise during drilling, contingency activities may be required to prevent operational failures from resulting in the permanent loss or abandonment of the exploration well and its objectives, thereby preserving the opportunity to reach the target reservoir despite unforeseen drilling problems. More specifically, they help prevent:

- Loss of the well due to mechanical or geological problems

- Abandonment of the well before reaching the target reservoir
- Loss of the wellbore because of stuck pipe, collapse or directional issues
- Excessive delays and cost overruns by providing predefined recovery options
- Safety and environmental incidents by enabling controlled responses to well integrity or pressure issues

Contingency activities are not part of the planned base case of the Project but may be undertaken in response to unforeseen operational circumstances. If undertaken, they may increase operational duration, drilling-fluid and cement use, cuttings and drilling-fluid discharges, and localised seabed disturbance compared with the planned well programme.

**Table 11-4: Contingency activities and measures**

| HAZARDS                                                | CONTINGENCY MEASURES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inability to continue the original wellbore            | Re-spudding may be necessary if issues arise that make it impractical to continue drilling the current well. Additional cuttings and drilling-fluid discharges may be generated, and additional cement may be required, depending on the stage at which the re-spud is undertaken.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Inability to continue the existing wellbore trajectory | A sidetrack may be required where technical, geological or wellbore conditions make it impractical to continue along the existing wellbore trajectory. The relevant section of the original wellbore shall be isolated, where required, using an appropriate barrier or mechanical system in accordance with the approved well programme and applicable well-integrity requirements. Any sidetrack shall be subject to the applicable management-of-change procedures and any regulatory notification, acceptance or environmental-permitting requirements arising from the proposed change. Any re-spud shall be managed within the assessed Project design envelope or through the applicable management-of-change and regulatory processes.                                        |
| Loss or degradation of MODU station-keeping            | Temporary interruption of operations may be required during the drilling campaign due to adverse weather, equipment issues, or other operational circumstances. Where disconnection from the well is required, the well will be secured using the applicable well barriers and disconnect procedures before the MODU moves off location. Operations may resume once conditions allow and the applicable operational and regulatory requirements have been satisfied.                                                                                                                                                                                                                                                                                                                  |
| Emergency disconnection from the well                  | A contingent Emergency Disconnect Sequence (EDS) may be initiated in the unlikely event the MODU needs to rapidly disengage from the well (e.g., due to severe weather). The EDS is designed to secure the well through the applicable BOP functions before disconnection of the lower marine riser package. Activation may result in the release of a limited quantity of riser contents, including drilling fluid and entrained cuttings, to the marine environment.                                                                                                                                                                                                                                                                                                                |
| Well influx / kick                                     | Managed in accordance with the project well-control bridging document. Response actions may include shutting in the well, monitoring well pressures, and circulating the influx from the wellbore while maintaining control with the applicable well-control equipment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Well Barrier failure / degradation                     | Well-barrier failure or degradation shall be managed in accordance with the Project Well Control Bridging Document and applicable well-integrity procedures. The well shall be placed in a safe condition, and remedial operations shall be undertaken as required to restore or replace the affected barrier before dependent operations resume.                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Stuck pipe requiring mechanical severance              | Explosives or other cutting tools may be maintained onboard in limited quantities as a contingency measure for mechanical pipe severance (for example in stuck-pipe scenarios). No Tubing-Conveyed Perforating (TCP) or other reservoir-targeting explosive operations are planned for the Asopus-1 campaign. The types and quantities of cutting tools held onboard, and their storage, handling, and use, will be controlled in accordance with applicable legal requirements, vessel procedures, and specialist-vendor arrangements. Tool components and severed tubulars will be recovered where safe and operationally practicable. Any material that cannot be recovered shall be documented and managed in accordance with applicable operational and regulatory requirements. |

## 11.3.2 Proposed major accident prevention and response measures

### 11.3.2.1 Preventive and protective measures

The Project has incorporated a range of preventive and protective measures to reduce the likelihood and potential impacts of major accident hazards associated with offshore drilling activities. These measures include engineering controls, operational procedures, equipment integrity management, inspection and maintenance programmes, monitoring systems, and personnel training. Together, they help prevent major accident hazards and minimise potential impacts on personnel, the marine environment and project assets, ensuring that residual risks are reduced to a level that is As Low As Reasonably Practicable (ALARP). Table 11-5 presents the proposed major accident / hazards prevention measures.

**Table 11-5: Proposed major accident / hazards prevention measures**

| HAZARD                               | MAJOR ACCIDENT / HAZARDS PREVENTION MEASURES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Blowout and Well Releases            | <ul style="list-style-type: none"> <li>Well control shall be managed through primary, secondary and, where required, tertiary well-control measures in accordance with the approved well programme, the Project Well Control Bridging Document and applicable well-control procedures. Primary well control shall be maintained using the drilling-fluid system and, where applicable, other approved pressure-control techniques. Secondary well control shall use the BOP and associated equipment to shut in and control the well following a loss of primary well control. Where primary and secondary measures are insufficient, appropriate tertiary well-control techniques shall be selected and implemented according to the circumstances.</li> <li>A pre-positioned Emergency Shut-In Device (E-SID), installed between the wellhead and the MODU BOP, will provide an additional independent emergency well-isolation capability. The device can shear and seal on any tubular or cable that may be run inside the well. In the unlikely scenario that the BOP stack fails to shut in a well if required, the E-SID will be activated, and the well will be secured.</li> </ul> <p>The selected MODU shall be equipped with well-control, monitoring, detection, shutdown and emergency systems appropriate to the well and operational hazards and compliant with applicable Flag State, classification, regulatory and Project assurance requirements. Rig-specific arrangements shall be verified through MODU selection, well examination, contractor assurance and the Notification of Well Operations.</p> <p>Source-control arrangements proportionate to the assessed well-release scenarios shall be established for the campaign. These shall address, as applicable, BOP intervention, subsea capping, containment (if applicable) and relief-well planning, in accordance with the Project emergency-response arrangements and applicable regulatory requirements.</p> |
| Fires, Explosions and Toxic Releases | <p>Mud process areas (shale-shaker, mud pits and mud pump rooms) are designated as Zone 1 (a zone in which an explosive atmosphere is likely to occur during normal operation) hazardous areas and shall be protected by mechanically forced negative-pressure ventilation.</p> <p>Flammable gas detectors shall be installed to detect the presence of flammable gas. Low-expansion foam shall be provided for firefighting in the mud process area, and an A60-rated fire wall shall be provided around the boundaries of the shaker room.</p> <p>The shaker-room entrance door shall be located in an unclassified area (cement unit), while CCTV shall be installed in the shale shaker room to facilitate monitoring of the shaker room.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

| HAZARD                      | MAJOR ACCIDENT / HAZARDS PREVENTION MEASURES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                             | <p>The main engine rooms shall be protected by gas, smoke and flame detection, a fire alarm push-button, a fixed CO<sub>2</sub> extinguishing system, portable firefighting equipment and fire hose stations.</p> <p>The bulkheads separating the engine rooms shall be A-60-rated. Fuel-oil cut-off valves shall be available and shall be remotely operated from outside the main engine room.</p> <p>Two detectors shall be provided at each air intake. The engine room ventilation shall shut down automatically when gas is detected in the engine room air intake. Protection against gas ingress through the combustion air shall be provided by rig savers.</p> <p>The vessel shall be equipped with enclosed escape tunnels on the port and starboard sides leading from aft to the accommodation block.</p> <p>HVAC systems comprising supply and exhaust dampers shall be installed at the aft and forward port and starboard positions of the escape tunnels to provide the needed pressurisation to prevent the ingress of smoke and gas into the tunnels.</p> <p>An extra door shall be provided to the escape tunnel to facilitate escape from the drill floor and minimise exposure of people in this area to hazardous events. Watertight doors in the escape tunnels shall be kept open unless a visiting vessel is approaching.</p> <p>The helideck refuelling tank is now located on deck 10 behind a firewall. The area is protected by a deluge system which can be operated remotely. In addition, the Heli guard station has been equipped with CCTV for improved fire monitoring. This use of the helideck refuelling tank is not planned for the campaign.</p> <p>H<sub>2</sub>S detectors shall be in the areas where gas is most likely to be released. Detection of toxic gas (10 ppm) shall give an alarm. High toxic gas (20 ppm) shall initiate the relevant emergency shutdown actions, including automatic control of the ventilation system in the related area.</p> <p>Where drilling into a potentially sour reservoir is anticipated, appropriate additional measures to manage the H<sub>2</sub>S hazard shall be put in place.</p> <p>The storage and use of hazardous or potentially toxic materials kept onboard shall be strictly controlled by MODU procedures. Small toxic gas releases resulting from normal or primary well control operations or from core breakout shall be controlled by standard contingency procedures.</p> <p>The drillship Emergency Response Plan shall define alarm, shutdown, firefighting, muster, evacuation, escape and rescue arrangements for fire, explosion and toxic-release events.</p> |
| Ship Collision              | <p>Despite the 500-metres restricted area, the MODU shall have a vessel-specific collision risk management plan, informed by the site-specific Shipping and Navigation Assessment. The plan shall include measures to provide adequate warning time, continuous monitoring of marine traffic by competent watchkeepers using AIS, ARPA and other available navigational aids, and appropriate communications, lights, shapes and signals reflecting the MODU's operational status.</p> <p>Radio communications, light signals and sound signals shall be used by the MODU and available support or standby vessels to warn vessels presenting a collision threat.</p> <p>The MODU and Platform Supply Vessels shall comply with COLREGs, SOLAS, applicable Flag State requirements and relevant national requirements, including display of the appropriate navigation lights, marks and day shapes for a vessel Restricted in its Ability to Manoeuvre.</p> <p>Subject to authorisation by the competent Greek authorities, a 500 m safety zone shall be maintained around the MODU during well operations. Project support vessels shall assist in monitoring the zone and communicating with approaching vessels, as required.</p> <p>Where an imminent collision threat cannot be managed through warning or vessel-intervention measures, the applicable emergency response, DP and disconnect procedures shall be implemented in accordance with the WSOG and MODU procedures.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Loss of Dynamic Positioning | <p>The MODU's dynamic-positioning system shall meet IMO DP Equipment Class 3 requirements or an equivalent Class 3 notation accepted by the relevant Flag State and classification society. Loss or degradation of station-keeping shall be managed in accordance with the WSOG and applicable MODU procedures, including emergency disconnection and movement off location where required.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Dropped Objects             | <p>Critical areas, including the Temporary Refuge, control rooms, switch rooms and fuel-oil tanks, shall be protected against dropped-object impacts by plated structural decks. Lifting procedures shall prohibit lifting heavy loads directly over live hydrocarbon-containing equipment.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Extreme Weather             | <p>The MODU shall be operated within the designed environmental limits.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Helicopter Accidents        | <p>The helideck shall be designed, certified, operated and maintained in accordance with applicable Flag State, classification, aviation and helicopter-operator requirements.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

| HAZARD | MAJOR ACCIDENT / HAZARDS PREVENTION MEASURES                                                                                                                                                                                                                                    |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        | The helideck refuelling tank shall be located behind a firewall and the area is protected by a remotely operated deluge system. Additionally, the Heli guard station is equipped with CCTV for improved fire monitoring to reduce the likelihood of a helideck fire escalating. |

### 11.3.2.2 Emergency response measures

In addition to the preventive measures described above, comprehensive emergency response measures have been established to ensure that emergency events will be managed promptly, safely and effectively. These measures include clearly defined roles and responsibilities, incident management procedures, communication and notification protocols, emergency response resources, evacuation and rescue procedures, and regular training and exercises. Together, they are intended to protect personnel, minimise environmental impacts, maintain effective command and control, and support the safe recovery of operations following an incident.

Response to oil pollution incidents will be undertaken in accordance with the applicable vessel Shipboard Oil Pollution Emergency Plan (SOPEP). Accidental releases of other chemicals will be managed through the relevant vessel and Project emergency procedures, taking account of the substance involved, its Safety Data Sheet and the nature and scale of the release. These arrangements will be implemented in accordance with applicable international, EU, Greek, flag-State, and port-State requirements and will be supported by the relevant drills and exercises.

Table 11-6 presents the proposed emergency response measures.

**Table 11-6: Proposed emergency response measures**

| EMERGENCY CATEGORY                    | EMERGENCY RESPONSE MEASURES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Immediate Actions and General Command | <p>The emergency response shall be managed in the following strict priority order: (1) Protect life, (2) Stabilise and regain control, (3) Protect the environment, (4) Protect the asset, and (5) Preserve evidence.</p> <p>The Bronze Leader (on-scene command role defined by the ERP) shall assume on-scene tactical command, stop affected work, isolate energy and ignition sources, establish exclusion zones, and coordinate the initial emergency response. Emergency alarms shall be activated, personnel shall be accounted for at muster stations, and procedures for partial evacuation, full evacuation or abandonment shall be initiated where required.</p>                                                              |
| Blowout and Well Control              | <p>In the unlikely event of a blowout or other loss of well control, drilling operations shall be suspended, and the well shall be secured using the applicable well-control equipment and procedures. Well pressure, flow and barrier status shall be monitored and appropriate well-control actions implemented in accordance with the Project Well Control Bridging Document. The BOP, E-SID, ESD, EDS and applicable DP response procedures shall be activated where required by the circumstances and relevant operating procedures. Where control cannot be restored using available well-control measures, the applicable source-control arrangements, including subsea capping and relief-well planning, shall be initiated.</p> |
| Fire and Explosion                    | <p>In the event of a fire or explosion, trained emergency response teams shall deploy the applicable fixed firefighting systems, isolate fuel and ignition sources, undertake boundary cooling, and control smoke to protect escape routes, as appropriate to the circumstances. Ventilation shall be managed, access to affected areas shall be restricted, and breathing apparatus shall be used where necessary to protect emergency responders.</p>                                                                                                                                                                                                                                                                                  |



| EMERGENCY CATEGORY                                 | EMERGENCY RESPONSE MEASURES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Marine Emergencies and Man Overboard               | Dynamic Positioning drive-off or drift-off events shall be managed in accordance with the Well-Specific Operating Guidelines and applicable MODU procedures, including emergency disconnection where required. Following collision or structural damage, flooding control, stability assessment and pollution containment measures shall be initiated as appropriate to the nature of the event. During man-overboard incidents, rescue equipment shall be deployed immediately, visual contact shall be maintained where practicable, and available support vessels and, where required, the competent search-and-rescue authorities shall be coordinated in accordance with the applicable emergency procedures.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Medical Emergencies and Medevac                    | An injured person (IP) shall be assessed and stabilised onboard by the Rig Medic with support from topside medical advisers where required. Medical evacuation shall be undertaken by helicopter or vessel, depending on the IP condition and prevailing operational conditions, to a suitable receiving medical facility. For multiple casualties or complex rescue operations, assistance shall be requested from and coordinated through the Joint Rescue Coordination Centre and the Hellenic Coast Guard, as required.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Toxic Gas (Hydrogen Sulphide) Releases             | In the unlikely event of a toxic-gas release, personnel shall be relocated to designated safe areas upwind, crosswind or within protected spaces. Heating, Ventilation and Air Conditioning (HVAC) controls shall be used to limit gas ingress, while escape sets, breathing apparatus and exclusion zones shall be implemented as required to protect personnel. Where required by the nature and scale of the release, external plume-dispersion modelling may be undertaken to assess potential offsite impacts.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Spill and Pollution Response                       | <p>The source of the spill shall be controlled where safe and practicable, and the activity associated with the loss of containment shall be suspended or isolated, as appropriate. Initial containment, recovery and protection measures shall be selected and deployed taking account of the substance released, the location and scale of the spill, prevailing conditions and available response capability. The response shall be escalated according to the nature and scale of the incident, with additional personnel, equipment and specialist response resources mobilised where required under the applicable vessel and Project spill-response arrangements.</p> <p>Where the spill exceeds onsite response capability, the competent authorities shall be notified, and additional response resources shall be mobilised in accordance with the applicable spill-response arrangements. The detailed response arrangements, including response organisation, notification, escalation, available resources and coordination with contractors and competent authorities, shall be defined in the applicable emergency and spill-response plans. Any activation of the National Contingency Plan shall be determined by the competent authorities. Chemical dispersants shall only be used following approval by the competent authority. Spill monitoring, waste management and environmental surveillance shall continue as appropriate to the nature and scale of the incident until response and recovery operations are completed.</p> <p>Response to oil pollution incidents will be undertaken in accordance with the applicable vessel Shipboard Oil Pollution Emergency Plan (SOPEP) and Project Emergency Response Plan which spill-response arrangements are included. Releases involving other chemicals will be managed through the relevant vessel and Project emergency procedures, taking account of the substance involved, its Safety Data Sheet and the nature and scale of the release.</p> |
| Special Hazards (Security, Cyber and Radiological) | <p>Security and cyber incidents shall be managed in accordance with applicable MODU, contractor and Project procedures, including, as appropriate, access control, isolation of affected Information Technology (IT) and Operational Technology (OT) systems, and implementation of manual operating procedures where safe.</p> <p>For radiological incidents, affected work shall be stopped, the affected area shall be isolated, access shall be controlled, and suitably qualified radiation-protection personnel shall be consulted or mobilised in accordance with the relevant licensed contractor's approved procedures and applicable EEAE requirements.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

### 11.3.3 Proposed measures to enhance climate change adaptation

The climate vulnerability assessment presented in Chapter 10 identified flooding and changes in wind characteristics as the only climate-related hazards requiring additional adaptation measures, based on their

Medium or High inherent risk. Hazards assessed as Low risk were adequately addressed through the inherent resilience of the Project design and the application of standard engineering practice.

The proposed adaptation measures presented Table 11-7 focus on managing flood risk at the temporary onshore support facilities through coordination with the Port of Igoumenitsa and Corfu International Airport operators, taking account of the facilities' existing flood-management, drainage and emergency-response arrangements. Project-specific measures include appropriate location or protection of critical equipment, electrical systems, chemicals, and hazardous materials within the areas allocated for Project use; monitoring of weather and flood warnings; and the timely securing, protection, or relocation of mobile Project equipment where required. Existing drainage and flood-protection arrangements may be supplemented by temporary Project controls where reasonably practicable and agreed with the relevant facility operator. Access and logistics arrangements will be reviewed in response to forecast or actual flooding, with practicable alternative arrangements implemented where required and available.

Measures addressing changes in wind characteristics focus on compliance with the applicable operating limits of the MODU, support vessels, lifting equipment and helicopters. Weather conditions and forecasts will be monitored using the meteorological information and decision-support arrangements available to the Project and its contractors. Weather-sensitive activities, including lifting operations, vessel transfers, offshore transfers and helicopter operations, will be postponed, suspended or rescheduled where applicable limits are approached or exceeded. Deck equipment will be secured, and the well, MODU and associated activities placed in a safe condition where required by forecast or actual adverse weather.

Climate change adaptation is an ongoing process. The effectiveness of the adaptation measures shall be monitored during Project execution through the applicable operational and emergency-management arrangements. The measures shall be reviewed where material changes to the Project, relevant facility arrangements or forecast operating conditions indicate that an adjustment is required.

**Table 11-7: Proposed Climate Change Adaptation Measures**

| CLIMATE-RELATED HAZARD                                                                | CLIMATE CHANGE ADAPTATION MEASURE                                                                                                                                                                                      |
|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Flooding of Onshore Installations (coastal, fluvial, pluvial or groundwater flooding) | Coordinate Project flood-risk arrangements with the Port of Igoumenitsa and the Corfu International Airport operators, taking into account the applicable facility flood-management and emergency-response procedures. |
|                                                                                       | Locate or protect Project-critical equipment, electrical systems, chemicals and hazardous materials taking account of the flood risk within the areas allocated for Project use.                                       |
|                                                                                       | Use existing drainage and flood-protection arrangements at the onshore support facilities, supplemented by temporary Project controls where reasonably practicable and agreed with the relevant facility operator.     |
|                                                                                       | Monitor applicable weather and flood warnings and implement arrangements for the timely securing, protection or relocation of mobile Project equipment and hazardous materials where required.                         |
|                                                                                       | Review access and logistics arrangements in response to forecast or actual flooding and implement practicable alternative arrangements where required and available.                                                   |
| Changes in wind characteristics                                                       | Apply the operational wind limits established for the MODU, lifting operations, vessel transfers and helicopter operations.                                                                                            |
|                                                                                       | Monitor weather conditions and forecasts using the meteorological information and decision-support arrangements available to the Project, MODU, vessels and aviation contractors.                                      |
|                                                                                       | Plan and conduct marine and aviation operations in accordance with applicable weather-related operating limits and procedures.                                                                                         |
|                                                                                       | Use a MODU and support vessels that comply with applicable Flag State, classification and regulatory requirements for the environmental conditions relevant to the Project.                                            |
|                                                                                       | Secure deck equipment in accordance with the MODU's and vessels' applicable procedures for forecast adverse weather.                                                                                                   |
|                                                                                       | Conduct lifting and crane operations within the applicable equipment limits and approved operating procedures, including relevant wind limits.                                                                         |



| CLIMATE-RELATED HAZARD | CLIMATE CHANGE ADAPTATION MEASURE                                                                                                                                                                                                                                                                                                                    |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        | <p>Postpone, suspend or reschedule offshore transfers, lifting activities and helicopter operations where applicable weather limits are approached or exceeded.</p> <p>Maintain contingency arrangements for temporary suspension of operations and placing the well, MODU and associated activities in a safe condition during adverse weather.</p> |

## 12 Environmental and Social Management and Monitoring

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The purpose of the Environmental and Social Management and Monitoring Plan (ESMP) is to:

- Present an overview of the Environmental and Social Management System (ESMS) that is being implemented to ensure the systematic and effective execution of Environmental and Social Management (ESM) obligations related to the project's phasing, including preparatory/mobilization, operation, and decommissioning/abandonment phases.
- Provide a summary of the role and responsibilities of Energean and the relevant drilling, marine, aviation, logistics and specialist contractors during each phase of the Project.

The ESMP provides the framework through which the mitigation, management and monitoring commitments established in this ESIA will be assigned, implemented, recorded and verified during Project execution. To this end, the ESMP:

- Identifies and communicates the relevant legal requirements and good practices that will govern the Project's environmental and social management.
- Describes how the Project will apply Energean's existing Health, Safety and Environmental Management System (HSE-MS), together with the relevant contractor and operator management systems, plans and procedures, to deliver the Project safely.
- Defines the arrangements for allocating responsibilities, monitoring performance, maintaining records, managing non-compliances and implementing corrective actions.

The ESMP shall be reviewed before commencement of Project activities and during Project execution where a material change in the Project, applicable requirements, environmental or social risks, contractor arrangements or monitoring results indicates that revision is necessary. Any revision will remain consistent with the approved Environmental Terms and other applicable regulatory requirements. Where a proposed change may affect the assessed Project design envelope or approved Environmental Terms, it will be managed through the applicable management-of-change and regulatory processes before implementation.

The ESMP is supported by relevant Management Plans (MPs), which provide the detailed controls and procedures required for their respective subject areas. These include, as applicable to the Project:

- Waste Management Plan (WMP),
- Chemical Use Plan (CUP),
- Onshore Traffic Management Plan (OTMP),
- Cultural Heritage Management Plan (CHMP).

Relevant MODU, vessel, aviation, logistics and specialist-contractor plans and procedures also apply to the activities under the control of the respective contractor or facility operator. These documents will be aligned with the applicable Project requirements through contractor assurance and bridging arrangements, as appropriate.

## 12.1 Health, Safety and Environmental Management System

Energean will apply its existing HSE-MS throughout the project, in accordance with the ESIA commitments, applicable legal and regulatory requirements, and Energean policy. The HSE-MS will:

- Promote compliance with applicable legislation and regulatory requirements,
- Promote the principles of good environmental practice during routine, non-routine and emergency activities;
- Develop goals and objectives to address significant issues,
- Define the roles and responsibilities of Energean and the relevant contractors, and in particular, the environmental and social obligations applicable to their respective activities;
- Identify the legal requirements, guidelines and good international industry practices applicable to the Project;
- Provide arrangements to verify that Project activities are carried out in accordance with the applicable environmental legal framework, Approved Environmental Terms, and Project procedures;
- Provide clear procedures for managing environmental and social impacts, incidents and non-compliances, including the assignment and close-out of corrective actions;
- Define induction, awareness, and role-specific training requirements,
- Defines a monitoring mechanism in order to:
- Verify the implementation of applicable mitigation measures,
- Monitor the effectiveness of mitigation measures, where appropriate,
- Define environmental monitoring and control requirements,
- Provide a mechanism for timely action in the event of environmental emergencies,
- Define training requirements at the various levels.

This system will be implemented with the aim of maintaining and, where appropriate, improving environmental and social performance. The main elements of the ESMP are the following (as applicable):

- Purpose,
- Project definition and facilities,
- Legislation and guidelines and applicable standards,
- Organizational structure (roles and responsibilities),
- Management plans and operational controls,
- Environmental and social monitoring,
- Notification and documentation,
- Change management,
- Training and awareness program,
- Cultural Heritage Management Plan,
- Waste Management Plan,
- Chemical Use Plan,
- Contractor and supplier management,

- Decommissioning / abandonment,
- Traffic management,
- Incident, non-compliance and corrective-action management; and
- Reporting.

### 12.1.1 Scope

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The scope of this document includes the activities to be carried out during the implementation of the Project.

The organizational structure of Energean and the main contractors may evolve and change during the implementation of the Project. Roles and responsibilities for implementing the applicable environmental terms and compliance tasks shall be defined and communicated before the relevant activities commence and updated where necessary to reflect the final contracting and operational arrangements.

The requirements and commitments set out in this document are applicable to Energean personnel and to contractors and suppliers to the extent relevant to their respective activities, roles and responsibilities. Contractors and suppliers shall implement appropriate management arrangements and procedures consistent with the applicable Project HSE requirements and ESIA commitments.

The Project-specific HSE arrangements shall be reviewed and updated where necessary to address material changes in applicable environmental, social, occupational health and safety, or working-condition requirements and risks.

### 12.1.2 Project standards

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The Project shall be managed in accordance with the applicable requirements and commitments identified in Chapter 5 of this ESIA, including, as relevant to the respective activity:

- Energean's HSE Policy,
- National Legislation (L.4014/2011) and all relevant regulations governing national permitting and the expanded environmental protection framework,
- International Convention for the Prevention of Pollution from Ships (MARPOL), as applicable to the MODU, Project vessels and relevant discharge or waste stream,
- International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC), as implemented through applicable legislation and relevant vessel and Project oil-pollution preparedness and response arrangements,
- Agreement for the Conservation of Cetaceans in the Black Sea, the Mediterranean Sea and the Contiguous Atlantic Area (ACCOBAMS) guidance,
- the Barcelona Convention and its Offshore Protocol, together with applicable decisions, standards and guidelines relevant to offshore exploration activities; and,
- Good Oilfield Practices and Good International Industry Practice (GIIP), where relevant and appropriate to the Project.

Other legislation and international conventions described in Chapter 5, including UNCLOS, the FUND

Convention, the Stockholm Convention and the Aarhus Convention, form part of the broader legal and policy context and shall apply to the Project only to the extent that their requirements are applicable to the Project or have been implemented through applicable EU or Greek legislation.

### 12.1.3 Setting goals and objectives

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The main purpose of the ESIA is to provide a framework for the implementation of the measures to avoid, mitigate or compensate for adverse environmental and social impacts, as well as to minimize and make manageable the risks to the environment, personnel and the local community.

The HSE during the Project duration will:

- Outline the way Energean will monitor and review the relevant Contractors' performance,
- Define the roles and responsibilities of Energean and relevant Contractors,
- Support implementation of the environmental and social commitments and controls to be established in the Approved Environmental Terms and applicable Project requirements,
- Establish applicable health, safety and working-condition requirements for Project activities,
- Require the relevant Contractors, within the scope of their respective activities, to:
- Identify potential risks associated with their activities and take appropriate measures to reduce and manage those risks,
  - Implement measures to prevent or minimise environmental damage and damage to third-party property,
- Implement the applicable impact-avoidance and mitigation measures; and,
- Perform activities under their control in accordance with applicable legislation, permit conditions, Project interface/bridging documents, Energean's applicable HSE requirements and relevant Good International Industry Practice.

### 12.1.4 Review of energen's health, safety and environmental management system

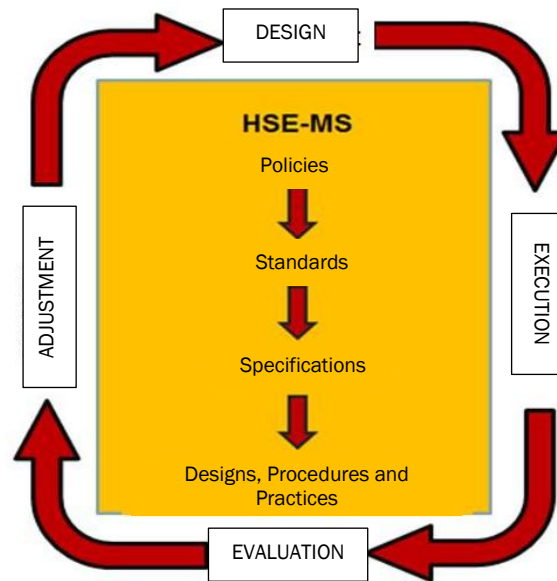
#### 12.1.4.1 Overview

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Energean is responsible for overseeing the environmental and social management of the project's activities, with the aim of ensuring the implementation of the applicable Project commitments and compliance with applicable environmental and social legal, regulatory, and corporate requirements.

Energean implements an HSE-MS, which defines the principles to be observed by all employees and contractors associated with the Project.

This Management System is based on internationally recognized good practices in the management of HSE risks in the exploration and production (E&P) industry and is structured around a classic PLAN – DO – ASSESS – ADJUST cycle.



**Figure 12-1: HSE MS**

In this way of managing risks:

- HSE risks associated with the Project's activities are identified and assessed,
- Necessary actions are taken to manage these risks, and the level of risk is reduced to the extent reasonably practicable.
- Performance and the effectiveness of controls are assessed through measurements, monitoring, reviews, audits and investigations, as appropriate,
- Plans and procedures are adjusted based on these assessments, where necessary, and
- Personnel participate in the HSE-MS in accordance with their respective roles and responsibilities.

#### 12.1.4.2 Risk assessment – threat/opportunity identification & risk management

The ESIA and risk assessment of the Project identify the environmental and social risks and potential impacts that require mitigation and control. The identification and assessment of impacts is carried out through a process that includes consultation, process simulations, on-site observations, literature review and experience from similar projects.

Energean and the relevant contractors shall apply, as appropriate, the Health and Safety Control Hierarchy and the Environmental and Social Risk Control Hierarchy. The relevant hierarchy shall be taken into account when developing appropriate mitigation strategies and management measures.

## Hierarchy of Controls

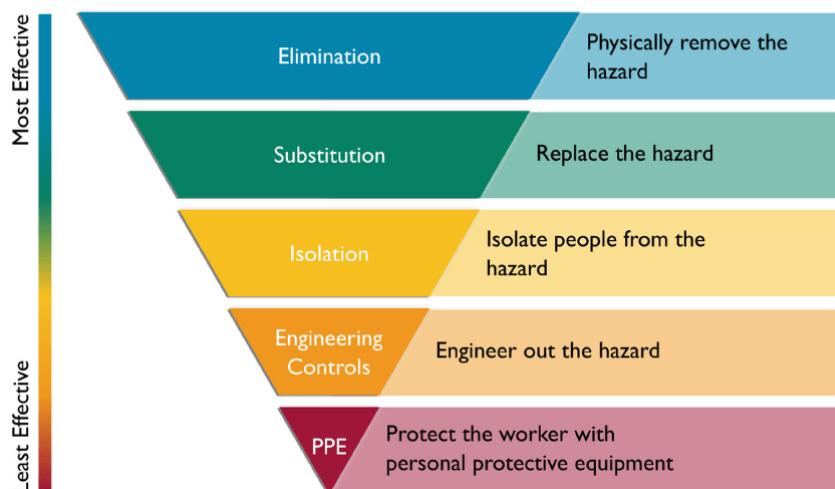


Figure 12-2: Hierarchy of controls for Occupational Health and Safety (OHS) hazards

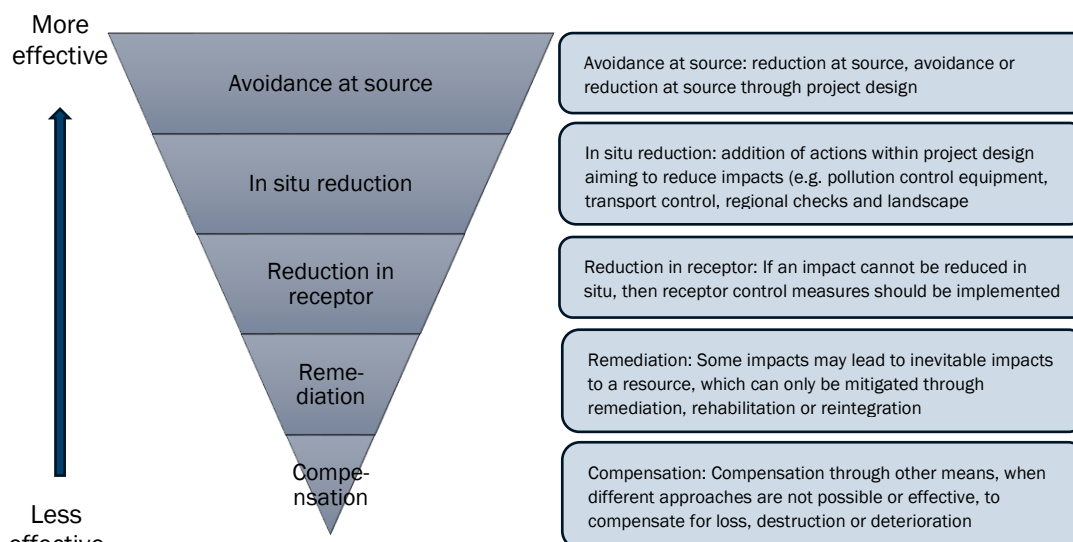


Figure 12-3: Hierarchy of controls for Environmental and Social Risks

To ensure ongoing risk management throughout the Project, Energean will maintain, or ensure the maintenance of, appropriate Project risk registers. The relevant contractors and operators shall maintain risk assessments and risk registers for the activities under their control, in accordance with their management systems and Project requirements. The applicable risk registers and assessments shall take account of the findings of the ESIA and other relevant Project studies and assessments. Energean and the relevant contractors and operators will ensure that applicable HSE and social risks are systematically identified, assessed and evaluated.

The methodologies for identifying, assessing and analysing risks will be appropriate in relation to their scope, nature and timing. This will support the systematic identification, prioritisation and documentation of risks and the implementation of appropriate control measures. The methodologies used will be in line with applicable Project requirements and relevant Good International Industry Practice. Energean and the



relevant contractors and operators will apply the relevant hierarchy of controls or mitigation hierarchy and the ALARP principle, as applicable, when developing risk-control measures.

Energean and the relevant contractors will ensure that Project personnel are aware of the key environmental, social and occupational health and safety risks applicable to their roles and activities, and of the measures to be implemented. Energean and the relevant contractors shall prepare and maintain risk assessments and risk registers appropriate to the activities under their respective control. Relevant contractor risk assessments, risk registers and supporting information will be made available to Energean for review and assurance in accordance with the applicable contractual and Project arrangements.

Risk information will be communicated to relevant Project personnel and functions, as appropriate to their responsibilities. Energean will review the material environmental, social and HSE risks associated with the Project and the related mitigation and management measures at appropriate stages before and during Project execution, and following a material change, a significant incident, a material monitoring finding, or the identification of a new or materially changed risk.

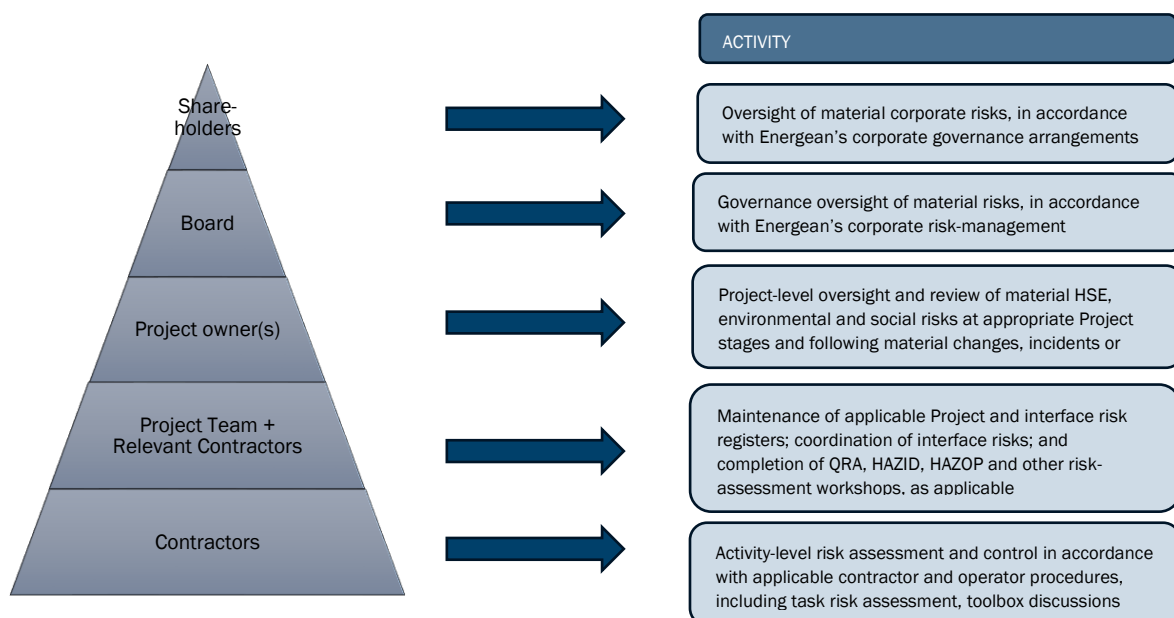


Figure 12-4: Hierarchy of responsibility for risk management

### 12.1.4.3 Legal and other requirements

The Project compliance framework (Project Standards) is provided in Chapter 5 of this ESIA, which includes an analysis of relevant legislation, national policy and development plans. Compliance with the relevant legislation will be a core commitment of Energean.

Energean will require contractors to identify and comply with applicable legislation and other standards relevant to the E&S management of their activities. It will also require Project personnel to be aware of and comply with legal and Project requirements applicable to their roles and activities. Energean shall maintain the Project-level register of applicable legal and other requirements. Contractors shall maintain any additional legal registers required under their own management systems and notify Energean of material changes in applicable requirements relevant to their Project activities.

## 12.1.5 The Environmental Monitoring and Management System as a management system for Energean

In support of the ESMP, environmental and social management plans will be developed and implemented to manage and mitigate the E&S issues associated with the Project, taking account of Energean's existing HSE management arrangements and the applicable plans and procedures of the relevant contractors. The following table presents the main Project management plans and their indicative scope. The Project's environmental and social management plans will be developed into full plans before commencement of the activities to which they apply, following appointment of the relevant contractors where their input is required and will be reviewed and updated where necessary to reflect final operational arrangements, applicable permit conditions, material changes or relevant findings from monitoring, inspection or incident investigation.

**Table 12-1: Management Plans**

| MANAGEMENT PLAN (MP) / CONTROLS                                       | ISSUE COVERED                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Chemical Use Plan (CUP)</b>                                        | <ul style="list-style-type: none"> <li>Regulatory framework</li> <li>Register of chemical substances</li> <li>Chemical selection and environmental hazard review</li> <li>Use and quantities</li> <li>Planned discharge routes and quantities, where applicable</li> </ul>                                                                                                                                                                                     |
| <b>Waste Management Plan (WMP)</b>                                    | <ul style="list-style-type: none"> <li>Waste Management requirements and principles</li> <li>Non-Hazardous Waste Management Procedures</li> <li>Hazardous Waste Management Procedures</li> <li>Waste segregation, storage, transfer and shore-reception arrangements;</li> <li>Waste documentation and authorised waste-contractor arrangements; and</li> <li>Monitoring, Reporting and Auditing</li> </ul>                                                    |
| <b>Cultural Heritage Management Plan (CHMP)</b>                       | <ul style="list-style-type: none"> <li>Cultural heritage awareness</li> <li>Chance Finds Procedure</li> <li>Monitoring and reporting, where applicable</li> </ul>                                                                                                                                                                                                                                                                                              |
| <b>Pollution Prevention-Controls</b>                                  | <ul style="list-style-type: none"> <li>Management of atmospheric emissions, noise, discharges, spills and hazardous materials in accordance with the applicable ESIA commitments, contractor and operator procedures, and legal and permit requirements</li> <li>Inspection and maintenance of relevant pollution-prevention equipment</li> <li>Spill prevention and control arrangements</li> <li>Monitoring and reporting required under the ESMP</li> </ul> |
| <b>Environmental and Social Management and Monitoring Plan (ESMP)</b> | <ul style="list-style-type: none"> <li>Project environmental and social commitments and responsibilities</li> <li>Applicable Environmental Terms and other Project requirements</li> <li>Management and monitoring arrangements</li> <li>Training and awareness requirements</li> <li>Contractor coordination and assurance</li> <li>Environmental incident and non-compliance management</li> <li>Reporting and record-keeping requirements.</li> </ul>       |

| MANAGEMENT PLAN (MP) / CONTROLS      | ISSUE COVERED                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Traffic Management Plan (TMP)</b> | <ul style="list-style-type: none"> <li>• Driver competence and journey-management requirements, where applicable</li> <li>• Vehicle movements, routing, loading and unloading within the onshore logistics base,</li> <li>• Vehicle access, parking and coordination with the relevant facility operator,</li> <li>• Risk assessment for cargo transportation, where applicable,</li> <li>• Monitoring and reporting</li> </ul> |

Energean will manage and oversee the environmental and social aspects of the preparatory/mobilisation phase of the Project, monitoring the technical, environmental and social performance of its contractors in accordance with the applicable contractual and Project assurance arrangements. This will be done through the implementation of the Management Plans and the HSE Management System. The contractors will be responsible for managing their personnel and implementing the environmental, social and HSE requirements applicable to the activities under their control, including relevant requirements of the ESMP and supporting Management Plans.

During Project execution, Energean will apply its HSE-MS and the applicable Project management plans to oversee implementation of the ESIA commitments and approved Environmental Terms. Relevant requirements will be incorporated into contractor requirements and aligned with contractor and operator plans and procedures, as appropriate. Environmental and social performance will be monitored and reviewed, and corrective actions or changes to controls will be implemented where required.

### 12.1.6 Other related HSE's MPs

The drilling rig used for the Project will implement the drilling contractor's applicable HSE management system, plans and procedures. The rig's plans, procedures and reporting requirements will be reviewed and aligned with the applicable Project HSE requirements and ESIA commitments through the relevant contractor-assurance and bridging arrangements.

Energean and the drilling contractor shall establish agreed HSE objectives, responsibilities, interfaces and reporting requirements for the Project, while retaining their respective management systems and responsibilities for the activities under their control.

Drilling monitoring and reporting will be carried out in accordance with applicable legal and permit requirements, the ESIA commitments, Project procedures and the drilling contractor's relevant environmental procedures. The applicable procedures will define the method and frequency of monitoring, recording and reporting for the following categories, as relevant to the Project and the systems installed on the selected MODU:

- Bilge water, deck drainage and wash water, sewage and oily-water management, and associated discharge or transfer records,
- Fuel consumption records,
- Drilling fluid management, cuttings, and relevant water-based mud (WBM) properties,
- Waste retained onboard and transferred to shore,
- Drilling, cementing, and any other chemicals used for planned or contingency well operations,

- Environmental sampling and labelling of drilling fluids or cuttings, where required under the Environmental and Social Monitoring Plan,
- Drilling chemicals reporting,
- Reports of environmental accidents, incidents, and spills,
- Well-completion environmental report, where required by the approved Environmental Terms or other applicable regulatory requirements.

Auditing and review are key elements of Energean's and the drilling contractor's HSE management arrangements. Audits and inspections shall be undertaken in accordance with the applicable Project and contractor assurance programmes. Additional audits and inspections may be carried out to address identified areas of concern. Joint audits may be carried out where appropriate to verify implementation of applicable Project requirements and agreed interfaces. Energean and the drilling contractor shall maintain arrangements for communication and for recording, assigning and tracking applicable audit and inspection actions to close-out.

### 12.1.7 Roles and responsibilities

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Energean is responsible for the design, procurement, preparatory activities and overall coordination and oversight of the proposed Project. As the Project Owner, Energean will have ultimate responsibility for overseeing the implementation of the ESMP, which will include:

- Ongoing management of environmental and social issues that arise as the detailed design progresses,
- Monitoring and auditing the relevant aspects of Contractors' performance in relation to HSE (including working conditions),
- Coordinating and overseeing implementation the implementation of the ESMP and specific management plans,
- Acting as a point of contact for consultation with the competent Authorities and relevant stakeholders,
- Monitoring and reporting on environmental and social compliance,
- Establishing requirements for contractors and verifying their performance against applicable Project requirements and regulations,
- Recording of compliance and non-compliance with the applicable requirements of the ESIA.

The relevant contractors of the project will be required to comply with the environmental, social and HSE requirements applicable to their respective activities, which will provide the framework for managing social and environmental issues throughout the project's implementation.

The main contractors will be required to develop and implement the plans and procedures necessary for the activities under their control, consistent with the applicable requirements of the ESMP and agreed bridging/interface document. The ESMP and applicable supporting Management Plans will be used to fulfil the commitments of the Project's ESIA and to coordinate and review the Project's environmental and social performance during the project's implementation. Particular attention will be paid to the following:

- Practical training and increasing environmental and social awareness of personnel,
- Supervision and monitoring of environmental and social issues,

Each Contractor will be responsible for:

- Complying with applicable environmental legislation, permit conditions and Project requirements;
- Demonstrating how the requirements applicable to their activities will be implemented;
- Implementing the applicable requirements of the ESMP, Bridging/Interface Document, and Energean's HSE-MS, including through their subcontractors;
- Identifying and complying with changes in legal and regulatory requirements applicable to their activities; and
- Providing information necessary to support updates to the ESMP, where required. Updates to the ESMP shall be controlled and approved by Energean.

## 12.1.8 Training

### 12.1.8.1 Introduction

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Environmental training will help ensure that the requirements of the ESIA and ESMS are understood and adhered to by Project personnel as applicable to their roles and activities. Environmental training will form part of the environmental management system. General environmental awareness training will be included in the Project induction or other relevant briefing provided to personnel whose activities may affect environmental or social performance.

Within the framework of the ESMS, role-specific training or briefings will be provided to personnel responsible for implementing mitigation measures, environmental monitoring, inspections, reporting or emergency response.

The training will apply to all relevant Project phases. Training topics may include, as applicable to the person's responsibilities:

- Training on specific topics (in accordance with the interface/bridging document),
- Environmental controls relevant to the work activity,
- Monitoring and control,
- Record keeping,
- Stakeholder communications, for personnel assigned such responsibilities,
- Emergency situations,
- Health and safety.

#### 12.1.8.2 Objectives of the training program

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The main objective of the training program is to ensure that the requirements of the ESIA applicable to Project personnel's roles and activities are clearly understood and adhered to throughout the Project. Staff training will contribute to the communication of the environmental controls set out in the ESIA.

#### 12.1.8.3 Roles and responsibilities

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Energean will define the Project-level environmental training and awareness requirements. Each contractor will be responsible for providing its personnel with the induction, training and briefings applicable to their assigned activities, using suitably competent personnel.

Contractors will be required to provide the applicable induction or briefing to their personnel before they commence relevant Project activities.

#### 12.1.8.4 Training log

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A training record will be maintained by Energean and the contractor(s). The training record will include, as appropriate:

- Topic,
- Date, time and location,
- Trainer, and
- Participants.

#### 12.1.8.5 Educational needs assessment

---

Additional training or briefing will be provided where a training need is identified. The criteria for assessing the need for additional training or briefing may include:

- Introduction of new personnel whose activities require Project-specific training,
- When repeated or material non-compliance is reported, where retraining is an appropriate corrective action,
- Following an incident where investigation identifies a training or awareness deficiency,
- Upon the arrival of a new contractor/subcontractor, where Project-specific requirements apply to its activities,
- Upon the start of a new activity or material change in working arrangements requiring additional competence or awareness.

#### 12.1.8.6 Educational material

---

Energean will provide the relevant Project environmental and social requirements to contractors. Each contractor will use or prepare training and briefing materials appropriate to its personnel's activities and

responsibilities. Separate training materials may be prepared for each topic, where necessary. Table 12-2 presents the indicative training topics.

**Table 12-2: Indicative scope of training program**

| STAFF                                                                                                      | CONTENTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | TIMELINE                                                 |
|------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| <b>Selected management personnel and contractor(s) / subcontractor(s)</b>                                  | <ul style="list-style-type: none"> <li>• Environmental and social sensitivity of the Project area</li> <li>• Key findings of the ESIA relevant to their responsibilities</li> <li>• Mitigation measures</li> <li>• Monitoring and control, where assigned</li> <li>• Record keeping, where assigned</li> <li>• Stakeholder communications, where assigned.</li> <li>• Emergency arrangements relevant to their roles</li> <li>• Applicable Health and safety requirements</li> </ul>                                | Before undertaking the relevant Project responsibilities |
| <b>Project personnel whose activities are subject to Project-specific environmental or social controls</b> | <ul style="list-style-type: none"> <li>• Environmental and social sensitivity of the Project area</li> <li>• Key findings of the ESIA</li> <li>• Good operating procedures</li> <li>• Mitigation measures</li> <li>• Waste management requirements relevant to their activities</li> <li>• Site management</li> <li>• Monitoring and control, where assigned</li> <li>• Record keeping, where assigned</li> <li>• Applicable Emergency arrangements</li> <li>• Applicable Health and safety requirements</li> </ul> | Before commencing the relevant Project activities        |

#### 12.1.8.7 Training during preparatory / mobilization phase

During the preparatory/mobilisation phase, contractors shall be responsible for the training of their personnel. Contractors shall ensure that personnel have the qualifications, competence and skills appropriate to their assigned activities.

Contractors shall use their existing training and competence arrangements to address applicable Project requirements. Where a contractor prepares a Project-specific Training Plan, it should address, as applicable:

- Induction training program for relevant personnel,
- Activity-specific training requirements,
- Applicable requirements for subcontractor personnel,
- Training records.

Applicable Management Plans shall identify any specialist training, competence or awareness requirements necessary for their implementation.



#### 12.1.8.8 Training during the drilling and decommissioning / abandonment phases

Training during drilling and decommissioning / abandonment phases will be provided according to the activities and responsibilities of relevant personnel, including, as applicable:

- Relevant Project and contractor management personnel,
- Drillship Personnel,
- Platform Supply Vessel (PSV) Personnel,
- HSE and specialist personnel.

Emergency response exercises will be conducted in accordance with applicable Project, MODU and vessel emergency-response procedures and regulatory requirements. Applicable Management Plans shall identify any specialist training, competence or awareness requirements necessary for their implementation.

### 12.1.9 Communications

#### 12.1.9.1 Communications during preparatory / mobilization phase

##### Communication between Energean and the Contractor(s)

During the preparatory/mobilisation phase, appropriate communication and reporting arrangements shall be established between Energean and the relevant contractors. Contractors shall, as applicable to their activities:

- Inform Energean in advance of the schedule, progress and key Project activities.
- Inform Energean promptly of planned visits or inspections by representatives of the competent authorities, where known, and of material regulatory enquiries relating to the Project;
- Inform Energean before planned Project-related meetings with the competent authorities, except where direct communication is required by law, permit conditions, safety, emergency or routine operational arrangements;
- Communicate to Energean any Project-related concerns received from external stakeholders;
- Maintain appropriate records of material Project-related regulatory and stakeholder communications; and
- Communicate with other contractors, where necessary, using the applicable Project coordination and communication arrangements.

##### Contact with Authorities

Energean shall coordinate Project-level communications with the competent authorities, including, as applicable, HEREMA, the Port Authorities, Hellenic Coast Guard, Civil Aviation, Marine Antiquities.

Contractors will inform Energean before planned Project-related engagement with the competent authorities. This will not restrict communications required under applicable law, permits, vessel or aviation procedures, emergency-response arrangements, or the independent statutory and safety responsibilities of the relevant contractor, operator, OIM or vessel Master. Energean will be informed promptly of any material communication made through those routes.

#### Communication with interested third party

Planned external communications concerning the Project shall be coordinated with Energean. This requirement does not restrict routine operational communications, navigational or aviation communications, emergency notifications, legally required reporting, or communications necessary to protect health, safety or the environment.

### 12.1.9.2 Communications during drilling and decommissioning / abandonment phases

---

#### Communication with authorities

Energean will coordinate Project-level communications with the competent authorities, including, as applicable, the Port Authorities, Hellenic Coast Guard, civil aviation authorities and Ephorate of Underwater Antiquities. The relevant contractors, operators, OIM and vessel Masters may communicate directly with the competent authorities where required by applicable law, permits, operational procedures or emergency-response arrangements. Energean will be informed promptly of material Project-related communications through those routes.

#### Communication with interested third party

Planned external communications concerning the Project will be coordinated with Energean. This requirement does not restrict routine operational communications, navigational or aviation communications, emergency notifications, legally required reporting, or communications necessary to protect health, safety or the environment.

## 12.1.10 Change management

### 12.1.10.1 Overview

---

Although the Project design and execution arrangements will continue to be developed, changes may arise during mobilisation, drilling preparation, drilling, decommissioning/abandonment that need to be addressed in a structured manner. Changes arising after submission or approval of the ESIA shall be assessed according to their nature and potential environmental and social implications. The main legal framework in Greece for the environmental permitting of Project modifications is the provisions set out in Law 4014/11 as supplemented by the relevant Joint Ministerial Decisions (JMD). Energean will follow the regulatory framework and the actions required will be determined according to the nature and potential environmental implications of the proposed change:

- Minor modifications usually do not require new or advanced environmental studies, but only environmental reports and notifications to the competent Authorities. Changes to the ESIA will likely be minimal.
- Moderate changes usually require Reports for Modification of the Approved Environmental Terms or even a new ESIA. In such a case, a revision of certain sections of the ESIA is required.
- Major changes require a new ESIA.

#### 12.1.10.2 Emergency preparedness and response

---

Energean will require the Project team and relevant contractors to identify potential emergency situations associated with the activities under their control and respond to these situations in an appropriate manner, to prevent or mitigate potential adverse environmental and social impacts.

Energean will require that the needs and interfaces of relevant stakeholders, including emergency services, competent authorities and neighbouring facility operators (if applicable), are considered as part of this process, and that emergency arrangements are reviewed, tested and revised in accordance with applicable Project, contractor, MODU and vessel procedures and regulatory requirements.

For the drilling phase, Energean and the relevant contractors will maintain the emergency-response procedures applicable to their respective responsibilities and activities. These procedures will be in place before commencement of the activities to which they apply and tested through drills and exercises at the frequencies defined in the applicable interface/bridging documents, emergency-response arrangements, and regulatory requirements. Relevant personnel will receive appropriate training.

Energean will review and monitor the performance of relevant contractors and the interfaces between the applicable emergency-response plans through the Project assurance process and following material exercises, incidents or changes, where appropriate.

During the drilling and decommissioning/abandonment phases, emergency preparedness and response will be managed through the applicable Project, MODU, vessel and contractor emergency-response arrangements, with Energean providing Project-level coordination, oversight and regulatory interface, taking account of the Project Qualitative Risk Assessment and Report of Major Hazards.

For the project's requirements, Energean will develop a dedicated Emergency Response Plan (ERP) which will be appropriately submitted to the regulatory authorities for review and approval.

#### 12.1.11 Contractor and supplier management

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All contractors and suppliers shall comply with the HSE requirements set out in their respective contracts, including the applicable HSE appendices. Contractors will also comply with the applicable Project's interface and bridging documents. Contractors will maintain and implement their own HSE management systems, plans and procedures appropriate to the activities under their control and aligned with the applicable contractual and bridging requirements.

Contractors and suppliers will comply with the legal and regulatory duties and responsibilities applicable to their respective activities and personnel, including applicable national, EU and international requirements in relation to OHS and labour issues.

Energean will provide contractors and suppliers with the Project information and requirements relevant to their respective scopes and undertake assurance of compliance with the applicable contractual and bridging requirements, proportionate to the nature and HSE risk of the contracted activities or services.

## 12.1.12 Environmental monitoring and reporting

### 12.1.12.1 Environmental compliance monitoring

---

Compliance monitoring will be carried out to verify compliance with the applicable requirements of the ESIA. The objectives of ESIA compliance monitoring will be:

- Monitoring Project activities with material environmental or social requirements,
- Verifying compliance of Project activities with the ESIA, the ESMP, the HSE Management System and other applicable Project requirements,
- Recording and communicating observations to the relevant Energean and contractor personnel, so that timely corrective measures can be taken, if required,
- Keeping a record of incidents of environmental significance and the related actions and corrective measures.

Compliance monitoring will be the responsibility of Energean and the relevant contractors and subcontractors, according to their respective activities and responsibilities. It will include, as appropriate:

- Monitoring by Energean HSE personnel or other designated Energean representatives; and
- Monitoring by designated personnel of the relevant contractors or subcontractors.

During compliance monitoring, the following matters may be checked, as applicable to the activity and monitoring purpose:

- Visible atmospheric emissions and unnecessary engine operation;
- Fuel and water consumption records;
- Waste management, including hazardous and non-hazardous waste;
- Noise-related controls or measurements where required by the ESIA, applicable procedures or in response to a specific concern;
- Project-related environmental concerns received through the applicable stakeholder communication arrangements;
- Environmental incidents, spills and discharges;
- Chemical use; and
- Implementation of applicable mitigation measures.

The proposed Monitoring Program is set out in Section **12.2.2**

### 12.1.12.2 Complaints register

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The Head of Corporate Affairs & Communications will maintain a register of Project-related concerns received through the applicable stakeholder communication arrangements and the actions taken in response. Material Project-related concerns will be forwarded to the appropriate Energean representative for further action, where required.

### 12.1.12.3 Photographic archive

Energean will maintain a photographic record, where appropriate, of relevant onshore areas allocated for Project use and material environmental observations made during Project activities. The photographic record will include, where relevant, photographs taken before and after Project use of temporary onshore areas, and photographs supporting environmental inspections, incident investigations or completion records. Material environmental non-compliances will be photographed where practicable and relevant to documenting the condition, corrective action or close-out.

### 12.1.12.4 Audit reports

As part of Energean's responsibilities, Energean HSE personnel or other designated representatives will conduct environmental inspections at a frequency appropriate to the activities, environmental risks and findings from previous inspections.

Routine workplace inspections will also be undertaken by the relevant contractors in accordance with their procedures. The areas listed in Table 12-3 will be checked where applicable to the location and activities being inspected.

**Table 12-3: Indicative Environmental Inspection Items**

| CONTROLS THROUGH OBSERVATION                                                                                  |
|---------------------------------------------------------------------------------------------------------------|
| Waste storage and management                                                                                  |
| Separation of solid waste into the applicable waste streams (general, hazardous, recyclable, waste materials) |
| Leaks and spills                                                                                              |
| Effectiveness of applicable environmental control measures                                                    |
| Stormwater drainage and wastewater management, where applicable;                                              |
| Water use                                                                                                     |
| Evidence of pollution or loss of containment; and                                                             |
| Any activities not compatible with the WMP or other applicable Project environmental requirements.            |

The relevant contractors will undertake inspections within the areas and activities under their control. The scope may include, as applicable:

- Implementation of the Environmental and Social Monitoring Plan,
- Relevant onshore and offshore work areas,
- Environmentally sensitive areas that could be potentially affected, where access and inspection are relevant and practicable,
- Waste storage facilities, including areas for general, hazardous and recyclable waste,
- Waste staging areas.

Energean will maintain Energean audits and inspections, together with relevant contractor audit and inspection records provided through the Project assurance arrangements, carried out to verify compliance with the ESMP.

#### 12.1.12.5 Disclosure and documentation

An effective mechanism for storing and communicating environmental information during the Project is essential. The key features of such a mechanism are:

- Accurately recording and maintaining monitoring information and records required by the ESMP, applicable permits and Project procedures,
- Sharing the information in a central (digital) location, accessible to relevant Project personnel,
- Processing the information to produce reports at the frequencies required by the ESMP, applicable permits and Project procedures, and
- Providing information to the competent authorities and other stakeholders in accordance with applicable legal requirements, permit conditions and Project communication arrangements.

#### 12.1.12.6 Meetings

The applicable ESMP requirements, responsibilities, interfaces and reporting arrangements shall be incorporated into the relevant HSE interface and bridging documents and communicated to relevant Project and contractor personnel before commencement of the activities to which they apply.

During operations, environmental performance will be included in the weekly HSE meetings. The review will cover, as relevant, monitoring and inspection findings, environmental incidents and non-compliances, stakeholder concerns, and the status of corrective actions. Material findings, decisions and actions will be recorded through the applicable meeting minutes or action-tracking arrangements.

#### 12.1.13 Non-Compliance incident management

Energean HSE personnel and relevant contractor personnel shall conduct inspections within their respective areas of responsibility to identify non-compliances. Where a non-compliance is identified, the finding shall be recorded and communicated to the responsible Energean and contractor personnel. Appropriate corrective actions will be assigned, tracked and closed out in accordance with the applicable Project and HSE procedures.

Incidents shall be promptly reported and investigated in accordance with the applicable HSE procedures, taking account of their actual or potential significance. All personnel will report incidents and near misses through the applicable reporting route, in accordance with their employer's HSE procedures and the applicable Project interface and bridging arrangements.

Incidents and non-compliances related to the Project shall be reported through the applicable contractor and Project reporting arrangements and communicated to Energean where required. Energean and the relevant contractors will maintain procedures for incident reporting, investigation, corrective and preventive action, where appropriate, and close-out, with the applicable reporting lines and responsibilities defined in the relevant HSE interface and bridging documents. Exceedances of applicable environmental standards, permit limits or defined Project thresholds shall be recorded and managed as incidents or non-compliances, as appropriate to their nature and significance.

Incident and non-compliance reporting procedures shall be communicated to relevant personnel as part of the applicable Project induction or briefing before they commence Project activities.

#### 12.1.14 Report writing

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Energean will ensure that material environmental monitoring, inspection, incident and compliance information is recorded through the applicable Project reporting and action-tracking arrangements. Environmental performance will be addressed through the weekly HSE meeting records during operations. Additional reports will be prepared where required by the ESMP, applicable permits or regulatory requirements, or to support material incident investigations, audits and Project completion reporting.

### 12.2 Environmental and social monitoring

#### 12.2.1 Introduction

---

The implementation of the ESIA will aim to comply with the applicable ESIA commitments, approved Environmental Terms and other regulatory requirements. Compliance assessment will be carried out by:

- Monitoring implementation of applicable mitigation measures,
- Verification of the effectiveness of the measures, where appropriate,
- Record keeping,
- Reporting in accordance with the applicable Project and regulatory requirements.

Within the framework of the ESIA, monitoring arrangements and parameters are established to:

- Verify the implementation of mitigation measures,
- Assess the effectiveness of the mitigation measures,
- Define the requirements for environmental monitoring and control,
- Support the timely identification and management of material environmental deviations or adverse effects.

The monitoring programme will assist in verifying whether the impacts of the Project are within the levels anticipated in the ESIA and will provide information to support timely action where a material deviation or unacceptable impact is identified. For each component of the monitoring programme, the following information will be presented, as applicable:

Relevant ESIA commitment or monitoring objective;

- Responsible party;
- Monitoring parameters;
- Monitoring frequency or trigger; and
- Monitoring method and location.

Monitoring of key environmental and social parameters is intended to support compliance verification and, where appropriate, assessment of Project-related effects during the drilling preparation and mobilisation,



drilling and decommissioning/abandonment phases. The monitoring process will allow Energean to identify changes in the environmental performance of the Project and determine whether corrective actions or adjustments to the environmental and social management arrangements are required.

Monitoring will be undertaken by Energean and the relevant contractors or specialist service providers in accordance with the responsibilities assigned in the Environmental and Social Monitoring Plan. Energean will provide Project-level oversight of the monitoring programme. The applicable monitoring techniques and frequencies are presented in Section 12.2.2 and may be refined where required by the approved Environmental Terms, competent authorities, final operational arrangements or material monitoring findings.

## 12.2.2 Proposed environmental and social monitoring plan

The Monitoring Plan for the Asopus-1 Exploration Drilling Project in Block 2 has been developed taking account of applicable legal and regulatory requirements, relevant Good International Industry Practice and, to the extent applicable to the Project, the provisions set out in YPEN SEA Approval No. 30373/2017. It incorporates the relevant baseline sensitivities and potential environmental risks identified in the ESBS (see Annex 02) and ESIA reports. Should new applicable legal or regulatory obligations emerge, the Environmental and Social Monitoring Plan will be reviewed and updated as necessary.

Table 12-4 presents the proposed Environmental and Social Monitoring Plan for the Project, covering applicable compliance monitoring and environmental-effects monitoring during the drilling preparation and mobilisation, drilling, and decommissioning/abandonment phases.

The proposed Monitoring Plan, will be carried out during drilling campaign as well as following the completion of the operations (plug & abandonment and demobilisation).

The results of the monitoring programme will be recorded and reported in accordance with the requirements specified in Table 12-4 and any applicable legal, regulatory or permit requirements. Where required by the approved Environmental Terms or other applicable regulatory requirements, an Environmental and Social Monitoring Report will be submitted to the competent authority and monitoring information will be made publicly available in the required form.

**Table 12-4: Environmental and Social Monitoring Plan for the Asopus Exploration drilling Project in Block 2**

(Note: The sampling stations and methodologies defined in this monitoring plan are derived from the Phase 2 Environmental and Social Baseline Study (ESBS) report (Annex 02 of this ESIA) to ensure comparability of operational and post-drilling results with pre-drilling baseline conditions.)

| ITEM NO.   | ENVIRONMENTAL / SOCIAL PARAMETER        | INDICATOR                                 | MEASURABLE PARAMETERS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | SAMPLING / OBSERVATION METHODOLOGY                                                                                                                                                                                                                                                                                        | SAMPLING / OBSERVATION FREQUENCY                                                                                               | LOCATIONS & SPATIAL EXTENT                                                                                                                                                                                                |
|------------|-----------------------------------------|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1</b>   | <b>SEAWATER AND SEDIMENT</b>            |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                           |                                                                                                                                |                                                                                                                                                                                                                           |
| <b>1.1</b> | <b>Seawater</b>                         | Seawater Quality                          | Continuous Vertical Profiling: Temperature, Salinity, Conductivity, pH, Dissolved Oxygen, Fluorescence (Chlorophyll-a), Turbidity.<br><br>Laboratory Water Chemistry: Total Suspended Solids, Total Organic Carbon, Nutrients (Total Nitrogen, Total Phosphorus, Orthophosphate, Ammoniacal-N, Nitrous-N, Nitric-N), Heavy & Trace Metals (Al, As, Ba, Cd, Cr-tot, Cu, Co, Fe, Pb, Hg, Ni, Sn, V, Zn), Total Petroleum Hydrocarbons (Light fraction C6–C10, Heavy fraction C10–C40) and 16 Priority Polycyclic Aromatic Hydrocarbons. | Continuous Profiling: Multiparameter probe lowered continuously across the full vertical water column (surface to seabed).<br><br>Water Sampling: Niskin bottle rosette sampler collecting water at 3 discrete depths (surface, middle, bottom). Chemical results evaluated against Directive 2013/39/EU & SQA-MA limits. | Post-drilling campaign / one off                                                                                               | Asopus-1 Station Group: stations D2a (East), D3a (500 m north), D4a (West), D5a (500 m south); near-field station D1a (subject to a safe operational offset from operations); and one Blank station D6a (~1 km distance). |
| <b>1.2</b> | <b>Cuttings</b>                         | Cuttings Monitoring                       | Grain size distribution, sediment classification, total organic carbon, carbonates, nutrients, heavy & trace metals (including Vanadium - V), total petroleum hydrocarbons (light fraction C≤12, heavy fraction C>12) and 16 priority polycyclic aromatic hydrocarbons.                                                                                                                                                                                                                                                               | Riser cuttings collected on board the drilling vessel, homogenized, and transferred to laboratory sample containers. Evaluated against HCMR Sediment Quality Guidelines.                                                                                                                                                  | Once per drilling section.                                                                                                     | Mobile offshore drilling unit during drilling operations at Exploration Well Asopus-1.                                                                                                                                    |
| <b>1.3</b> | <b>Sediment</b>                         | Sediment Monitoring                       | Visual seabed inspection, sediment temperature, pH, redox potential, grain size, total organic carbon, carbonates, nutrients, heavy & trace metals (Al, As, Ba, Cd, Cr-tot, Cu, Co, Fe, Pb, Hg, Ni, Sn, V, Zn), total petroleum hydrocarbons (light fraction C≤12, heavy fraction C>12), 16 priority polycyclic aromatic hydrocarbons, and microplastics.                                                                                                                                                                             | Surface sediment sampling via Van Veen grab sampler (2 x 0.1 m²). Laboratory results evaluated against EU legislation / HCMR SQG ERLs.                                                                                                                                                                                    | Post-drilling campaign / one off                                                                                               | Asopus-1 Station Group: stations D2a (East), D3a (500 m north), D4a (West), D5a (500 m south); near-field station D1a (subject to a safe operational offset from operations); and one Blank station D6a (~1 km distance). |
| <b>1.4</b> | <b>Ballast Water</b>                    | Ballast Water Management                  | Verification of ballast water treatment, operational logs, and discharge standards compliance.                                                                                                                                                                                                                                                                                                                                                                                                                                        | Review of the approved Ballast Water Management Plan, Ballast Water Record Book and relevant operational records. Any treatment system alarm, deviation or malfunction will be managed in accordance with the approved plan and applicable vessel procedures.                                                             | During applicable ballast-water management or discharge operations and following any system alarm, deviation or malfunction.   | On board the mobile offshore drilling unit.                                                                                                                                                                               |
| <b>2</b>   | <b>BENTHIC FAUNA AND MEGAFAUNA</b>      |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                           |                                                                                                                                |                                                                                                                                                                                                                           |
| <b>2.1</b> | <b>Benthic Communities</b>              | Benthic Macrozoobenthos Ecological Status | ROV visual/photographic seabed inspections.<br><br>M-AMBI Index or BENTIX, AMBI, Shannon-Wiener Diversity, Pielou Evenness, Species Richness, and Taxa Abundance (individuals per square meter).                                                                                                                                                                                                                                                                                                                                      | ROV visual/photographic seabed inspection to record seafloor morphology, biological features.<br><br>Van Veen grab sampling (2 x 0.1 m²), onboard sieving through 0.5 mm mesh, preservation, and laboratory taxonomic identification down to the lowest possible level, at least 2 replicates per station.                | Post-drilling campaign / one off                                                                                               | Asopus-1 Station Group: stations D2a (East), D3a (500 m north), D4a (West), D5a (500 m south); near-field station D1a (subject to a safe operational offset from operations); and one Blank station D6a (~1 km distance). |
| <b>2.2</b> | <b>Marine Mammals &amp; Sea Turtles</b> | Marine Megafauna Occurrence & Mitigation  | Species identification, group size, distance, bearing, behavior, life stage, mitigation action logs, exclusion zone enforcement.                                                                                                                                                                                                                                                                                                                                                                                                      | Visual: Dedicated Marine Mammal Observers using reticle binoculars during daylight.<br><br>Acoustic: Passive Acoustic Monitoring operators using hydrophone array and monitoring software during night/poor visibility.<br><br>Logging: Standardized JNCC Marine Mammal Recording Forms and ACCOBAMS guidelines.          | Continuous throughout VSP activities and optional for the rest of the drilling campaign. In line with the ACCOBAMS Guidelines. | On board the mobile offshore drilling unit and surrounding 500 m safety mitigation zone around Asopus-1.                                                                                                                  |

| ITEM NO. | ENVIRONMENTAL / SOCIAL PARAMETER         | INDICATOR                                | MEASURABLE PARAMETERS                                                                                                                                                                                                                                                                                                               | SAMPLING / OBSERVATION METHODOLOGY                                                                                                                                                                                                                                                                                                                                                                                                                        | SAMPLING / OBSERVATION FREQUENCY                                                                                                                                                                                                    | LOCATIONS & SPATIAL EXTENT                                                             |
|----------|------------------------------------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 2.3      | Megafauna Collisions                     | Marine Megafauna Incident Reporting      | Collision or suspected collision involving a Project vessel and a marine mammal or sea turtle, including any observed injured or dead animal.                                                                                                                                                                                       | Observations made during routine vessel watchkeeping and Project activities. In the event of a collision or suspected collision involving a Project vessel and a marine mammal or sea turtle, the vessel Master will report the incident immediately to Energean through the applicable incident-reporting arrangements. Energean will notify the competent authorities as soon as reasonably practicable and within any applicable regulatory timeframe. | During routine vessel operations / Per occurrence                                                                                                                                                                                   | On board the mobile offshore drilling unit and project support vessels.                |
| 3        | WEATHER CONDITIONS                       |                                          |                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                     |                                                                                        |
| 3.1      | Weather Conditions                       | Weather Conditions Monitoring            | Review of weather observations and forecasts obtained through the meteorological systems and services used by the MODU and Project vessels, supplemented by visual observations in accordance with applicable operational procedures.                                                                                               | The mobile offshore drilling unit and support vessels will consult real-time weather conditions and forecasts through dedicated marine weather forecast programs and databases accessible to ships, supplemented by visual observations from crew and observers (visibility, sea state, swell, precipitation, sun glare).                                                                                                                                 | In accordance with the applicable MODU, vessel and Project operational procedures, and when relevant to the interpretation of an environmental incident or monitoring observation..                                                 | On board the mobile offshore drilling unit and support vessels.                        |
| 4        | ENVIRONMENTAL PERFORMANCE OF THE PROJECT |                                          |                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                     |                                                                                        |
| 4.1      | Waste                                    | Waste Generation & Management            | Types and quantities of waste transferred ashore, classified using the applicable European List of Waste code (EWC/ELW); waste segregation and storage; waste-transfer documentation; and transfer manifest to appropriately authorized waste contractors or facilities.                                                            | Review of waste-transfer documentation and relevant contractor records, supplemented by inspection of waste segregation and storage arrangements in accordance with the Waste Management Plan..                                                                                                                                                                                                                                                           | Weekly basis.                                                                                                                                                                                                                       | On board drilling unit, support vessels, onshore supply base, and waste staging areas. |
| 4.2      | Resource Use                             | Energy & Raw Material Consumption        | Resource inputs: fuel consumption, fresh water transferred to the MODU and Project vessels, drilling chemical additives, freshwater produced offshore; resource-saving measures, where recorded by the applicable MODU or vessel systems                                                                                            | Fuel consumption logs, Chemical Use Plan inventories and chemical-use records, freshwater transfer records, and available MODU freshwater production records.                                                                                                                                                                                                                                                                                             | Weekly basis.                                                                                                                                                                                                                       | Throughout the project.                                                                |
| 4.3      | Logistics                                | Logistics & Vessel Traffic               | Support vessel and helicopter trip frequency, fuel consumption..                                                                                                                                                                                                                                                                    | Recording and monitoring support vessel and helicopter operational logs.                                                                                                                                                                                                                                                                                                                                                                                  | Weekly basis.                                                                                                                                                                                                                       | Onshore supply base to offshore drilling location.                                     |
| 4.4      | Workspaces                               | Workplace Control                        | Waste segregation and storage; evidence of hydrocarbon or chemical leaks and spills; condition of relevant secondary containment and drainage arrangements; and availability of applicable spill-response equipment.                                                                                                                | On-site visual inspections of deck and relevant areas, chemical and waste storage areas, secondary containment, drainage arrangements and spill-response equipment, as applicable to the location and activities.                                                                                                                                                                                                                                         | Through routine workplace inspections undertaken in accordance with the applicable contractor, MODU and facility procedures. Material findings shall be recorded and managed through the applicable corrective-action arrangements. | On board drilling unit and operational areas.                                          |
| 5        | HUMAN-MADE ENVIRONMENT                   |                                          |                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                     |                                                                                        |
| 5.1      | Socio-Economic                           | Grievance Management                     | A grievance mechanism shall be established and made accessible to local economic stakeholders (incl. tourism / fishing stakeholders); Parameters to be measured will include the number of grievances received; Number/% closed out; average resolution time (days); grievances by category (fisheries, tourism, employment, other) | Review of Project grievance register/log; review of regional administrative publications, studies, and official announcements.                                                                                                                                                                                                                                                                                                                            | Monthly basis.                                                                                                                                                                                                                      | Igoumenitsa Port office / onshore logistics base, and published Project contact.       |
| 5.2      | Socio-Economic                           | Local Employment and Procurement         | Parameters to be measured will include: Number of local/regional personnel employed (direct & contracted) and as % of total workforce; value/% of procurement spend awarded to local/regional suppliers                                                                                                                             | Review of Project HR and procurement/contracting record.                                                                                                                                                                                                                                                                                                                                                                                                  | Monthly basis.                                                                                                                                                                                                                      | Municipal and regional project area.                                                   |
| 6        | HEALTH AND SAFETY                        |                                          |                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                     |                                                                                        |
| 6.1      | H&S Conditions                           | Occupational Health & Safety Performance | Total recordable incidents, lost time incidents, material findings from HSE inspections and audits; and status of related corrective actions.                                                                                                                                                                                       | Review of applicable Project, contractor, MODU, vessel and shore-base HSE records, including incident reports, inspection and audit findings, and corrective-action records.                                                                                                                                                                                                                                                                              | Weekly basis during operations and following a significant incident or material HSE finding.                                                                                                                                        | On board drilling unit, support vessels, and Igoumenitsa shore base.                   |

| ITEM NO. | ENVIRONMENTAL / SOCIAL PARAMETER | INDICATOR                                 | MEASURABLE PARAMETERS                                                                                                                      | SAMPLING / OBSERVATION METHODOLOGY                                                                                                                      | SAMPLING / OBSERVATION FREQUENCY | LOCATIONS & SPATIAL EXTENT                                           |
|----------|----------------------------------|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------------------------|
| 6.2      | H&S Training & Concerns          | Safety Training & Workforce Communication | Safety induction completion rate; toolbox talk attendance records; number of worker concerns raised/resolved; training completion records. | Review of induction logs, toolbox talk registers, worker concern log, training matrix maintained under the relevant Project and contractor arrangements | Weekly basis.                    | On board drilling unit, support vessels, and Igoumenitsa shore base. |

# 13 Elements of regulatory approval and proposed environmental terms for approval

## 13.1 Type and scale of activity

The Project title is Hydrocarbon Exploration program - Exploration Well Asopus-1 in Block 2 – Ionian Sea.

The activity aligns with the respective Strategic Environmental Assessment (SEA) for E&P in the Ionian Sea (covering the eleven (11) Concession Blocks including also Mesiniakos and Lakonikos Gulfs) that was prepared in 2016 and a respective approval was granted in 2017 (DIPA/MoEE 30373/3.7.2017). The Project comprises the drilling of one offshore exploration well (Asopus-1) within Block 2 in the Ionian Sea. The objective of the proposed activity is to evaluate subsurface geological formations and assess the potential presence of hydrocarbons. The well will be drilled using a mobile offshore drilling unit (MODU), which is purpose-designed for deep-water drilling operations, utilising shore base for logistics support (Igoumenitsa Port) and Corfu Airport (CFU) for transport.

The proposed activity is temporary and limited in scope, comprising the drilling, evaluation, and subsequent plugging and abandonment of the exploration well in accordance with applicable regulatory requirements and industry good practices.

No oil or gas well testing or production is currently planned as part of this activity and thus of the present ESIA. If hydrocarbons are identified, any further appraisal or development activities would be subject to separate permitting and environmental assessment processes in line with all respective EU and National legislative frameworks.

## 13.2 Geographical location

The Concession Area of Block 2 is governed by a hydrocarbons lease agreement with the Hellenic Republic. The Lease Agreement (the “Lease Agreement”), dated 31 October 2017, grants exploration and exploitation rights for Block 2. The Lease Agreement was ratified by the Hellenic Parliament under Law 4525/2018 and published in GG No. 47/A/15.03.2018.

The proposed Asopus-1 exploration well is located within the Block 2 license area in the Greek Exclusive Economic Zone (EEZ) in the northwestern Ionian Sea. It is approximately 44.3 km (23.9 nautical miles) offshore Othonoi Island, approximately 3.2 km (1.7 nautical miles) from the Italian Exclusive Economic Zone (EEZ) and in water depths of approximately 840 m. There are no islands, coastal features, or fixed subsea installations in the immediate vicinity of the well location.

The indicative well location, including geographic coordinates and water depth, is provided in Table 1-2. The coordinates represent the planned seabed location of the well and the anticipated bottom hole position for the exploration programme.

Coordinates are provided using the World Geodetic System 1984 (WGS 84) datum, which is the standard reference system used for offshore operations in the region. The location lies within UTM Zone 34N.

**Table 13-1: Coordinates and Water Depth of proposed Asopus-1 exploration well**

| WELL            | LEASE AGREEMENT | LATITUDE         | LONGITUDE        | WATER DEPTH |
|-----------------|-----------------|------------------|------------------|-------------|
| <b>Asopus-1</b> | Block 2         | 39° 37' 25.92" N | 18° 57' 28.51" E | ~ 840 m     |

The Project will utilise two existing onshore support facilities for logistics and aviation activities:

- (i) an onshore logistics / supply base located within the Port of Igoumenitsa (mainland Greece) appropriately designated under a lease agreement with Port Authority of Igoumenitsa (OLIG SA) and in accordance with the overarching AEPO (initially granted by virtue of JMD 144974/08.06.2005) and lastly updated by virtue of Decision ΥΠΕΝ/ΔΙΠΑ/12891/794/17.03.2022), as currently supplemented to fit the specific project “Asopus-1” support operations; and
- (ii) Corfu International Airport (CFU), which will be used as the helicopter operations base for personnel transfers between the onshore environment and the Mobile Offshore Drilling Unit (MODU), under permission / agreement with CFU’s operator (Fraport GR), which operates under AEPO initially granted by virtue of MD 11945/08.03.2017 and lastly updated by virtue of Decision ΥΠΕΝ/ΔΙΠΑ/123235/8107/23.11.2022)

The shore base incorporates zoning to minimise environmental risks, including spill sensitive quayside areas, controlled storage zones, quarantine areas, laydown areas and defined traffic corridors.

Corfu International Airport (CFU) will provide the aviation logistics hub for routine crew transfers (and where applicable, emergency responses such as medical evacuation) in accordance with the airport’s routine operations.

The following tables, present the coordinates of the onshore logistics support base as well as Corfu Airport (CFU).

**Table 13-2: Coordinates of the proposed logistics support base**

| ONSHORE LOGISTICS SUPPORT BASE | LATITUDE (WGS84) | LONGITUDE (WGS84) | X (ΕΓΣΑ 87) | Y (ΕΓΣΑ 87)  |
|--------------------------------|------------------|-------------------|-------------|--------------|
| Igoumenitsa Port (Area 1)      | 39° 29' 04.24" N | 20° 15' 19.01" E  | 177.765,45  | 4.376.956,26 |
| Igoumenitsa Port (Area 2)      | 39° 29' 06.29" N | 20° 15' 34.34" E  | 178.134,34  | 4.377.004,21 |

**Table 13-3: Coordinates of the proposed aviation logistics base (CFU)**

| AVIATION LOGISTICS BASE (CFU)     | LATITUDE (WGS84) | LONGITUDE (WGS84) | X (ΕΓΣΑ 87) | Y (ΕΓΣΑ 87)  |
|-----------------------------------|------------------|-------------------|-------------|--------------|
| Corfu International Airport (CFU) | 39° 36' 07" N    | 19° 54' 42" E     | 148.794,88  | 4.391.282,96 |

During drilling operations, a temporary 500 m safety zone will be established around the drillship at the Asopus-1 well location to ensure navigational safety and safe conduct of offshore operations. The establishment of the safety zone will be communicated through official maritime notifications, including NAVTEX messages and Notices to Mariners, issued by the Hellenic Coast Guard.



### 13.3 Project classification

According to Ministerial Decision DIPA/37674/10-8-2016, as amended by Ministerial Decisions 2307/2018 and YPEN/DIPA/17815/1069/2022 (GG 841/B' 24.2.2022) and currently in force, the main drilling activity in Asopus-1 falls under **Category 5** "Mining and similar activities", Serial **Number 7** "Extraction of hydrocarbons and exploratory drilling in search of hydrocarbons" and is included in Subcategory **A1** since all works of this activity are classified as such.

In addition, the onshore support facilities in Igoumenitsa Port, fall under Category 3 "Port infrastructure", Serial Number 2a "Ports and port facilities for support of industrial activities (e.g. support of industrial facilities, fuel handling, petrochemicals or chemicals, toxic and harmful substances, quarry products, etc.)" and are classified under Subcategory A2.

### 13.4 Project owner

The Project Owners are Energean Hellas Ltd. (Operator), on behalf of the co-lessees Energean Hellas Ltd ExxonMobil Exploration and Production Greece (Crete) B.V. and HelleniQ Upstream West Kerkyra S.A.

### 13.5 Institutionally designated key characteristics of the project area and environmental sensitive features

#### 13.5.1 Spatial planning and land uses

The spatial planning framework applicable to the wider area of the Project is defined:

- By the National Maritime Spatial Strategy (NMSS), approved by Act of the Cabinet 6/17.04.2025 (GG D 227/2025), which recognizes objective for the promotion of maritime development and a potentially important activity contributing to national energy security and energy supply objectives and emphasizes that any hydrocarbon-related activities should be planned, developed, and implemented in a manner that minimizes adverse impacts on both the natural environment and human activities, ensuring compatibility with environmental protection objectives and other maritime uses.
- By designation of Maritime Spatial Unit (MSU 4), which covers the maritime area of western Greece, including the Adriatic, Ionian Sea, and Central Mediterranean marine regions where Greece exercises sovereign rights and jurisdiction in accordance with national legislation by virtue of MD YPEN/ΔΧΩΡΣ/43090/574/17.04.2025 (GG D 229/2025),
- By the General Framework for Spatial Planning and Sustainable Development (GFPSSD) (GG 128/A/03-07-2008), with whose strategic choices and directions the Project is compatible.
- By the Revised Regional Spatial Framework of the Region of Epirus, adopted by Ministerial Decision YPEN/ΔΧΩΡΣ/78523/1208 and published in GG 286 ΑΑΠ/28-11-2018.
- By the Special Framework for Spatial Planning and Sustainable Development for Industry (Joint Ministerial Decision 11508/2009, GG 151/AAP/13-4-2009), with whose choices and directions the Project is compatible.
- By the Special Framework for Spatial Planning and Sustainable Development for Renewable Energy Sources (Joint Ministerial Decision 49828/2008, GG 2464/B/2008).



- By the Special Framework for Spatial Planning and Sustainable Development for Aquaculture (GG 2505/B/2011).

### 13.5.2 Land uses

The existing and proposed Port Zone boundaries are maintained in accordance with the Igoumenitsa Port Master Plan and the decisions of the Port Planning and Development Committee (ESAL), namely *Decision 02/10.12.2002* of the 4th ESAL Session and *Decision 02/17.12.2004* of the 15th ESAL Session.

Permitted uses within the Port Zone include port facilities, infrastructure, and associated developments in accordance with Ministerial Decision 8216/126/14 “ Revision of the Port Master Plan of Igoumenitsa”.

### 13.5.3 Environmental sensitivity features of the project area

#### 13.5.3.1 National protected areas

The Project does not overlap any area of the Natura 2000 network or any other legally designated protected area.

The nearest Natura 2000 sites to the Exploration Well Asopus-1 are GR2230010 'Marine Area of the Diapontia Islands' and GR2230008 'Diapontia Islands: Othoni, Ereikousa, Mathraki and Rocky Islets', both approximately 41 km from the well.

The nearest Natura 2000 sites to the Igoumenitsa shore base are GR2120001 'Ekvoles (Delta) Kalama' and GR2120005 'Ygrotopos Ekvolon Kalama kai Nisos Prasoudi', approximately 3.5 km from the proposed facilities.

#### 13.5.3.2 International protected areas

The proposed exploration well falls within the Ecologically or Biologically Significant Marine Area (EBSA) 'South Adriatic Ionian Strait'. This EBSA area encompasses the transition zone between the southern Adriatic Sea and the northern Ionian Sea, including the Otranto Channel, with water depths ranging approximately from 200 m to 1,500 m. The designation recognizes the ecological importance of the area as habitat for Cuvier's beaked whale (*Ziphius cavirostris*), giant devil ray (*Mobula mobular*), striped dolphin (*Stenella coeruleoalba*), Mediterranean monk seal (*Monachus monachus*), and loggerhead sea turtle (*Caretta caretta*). The area also supports highly migratory species, including tuna (*Thunnus thynnus*) and swordfish (*Xiphias gladius*), as well as pelagic sharks and deep-sea benthic communities, including cold-water corals and sponge aggregations.

The project does not overlap any other area currently under any international designation status. In particular:

- The Hellenic Trench EBSA is located further south of the Project area, approximately 187 km from the Asopus-1 exploration well.
- The closest designated Important Marine Mammal Area (IMMA) to the project area is the Ionian

Archipelago IMMA, located approximately 37 km east of the Asopus-1 exploration well.

- The closest Cetacean Critical Habitat (CCH) to the project area is the Sazani Island-Karaburun Peninsula, located approximately 72 km north from the proposed exploration well 'Asopus-1'.
- The closest Important Shark and Ray Area to the project area is the Santa Maria di Leuca ISRA, located approximately 20 km west/southwest from the exploration well 'Asopus-1'.
- The closest Key Biodiversity Area to the project area is the Diapontia islands (Othonoi, Ereikousa, Mathraki) and surrounding islets KBA (2943), located approximately 40 km northeast from the exploration well.
- The Marine Protected Areas (MPAs) within the wider region include designated sites across Greek, Italian, and Albanian waters. Within Greek waters, the closest MPA to the well is the Marine Area of the Diapontia Islands MPA, located approximately 43 km to the northeast. Additional MPAs within the Greek Ionian include the Coastal marine zone from Kanoni to Mesongi (approximately 81 km east), the Paxoi and Antipaxoi Islands and the wider marine area MPA (approximately 93 km southeast), and the Lefkimmi salt pans MPA (approximately 97 km east). In Italian waters to the northwest, the closest site is the Costa Otranto–Santa Maria di Leuca MPA (approximately 53 km away). Other MPAs along the Italian coastline include the Posidonieto Capo San Gregorio–Punta Ristola MPA (approximately 57 km away), the Litorale di Ugento MPA (approximately 66 km away), the Alimini MPA (approximately 69 km away), the Litorale di Gallipoli e Isola S. Andrea MPA (approximately 80 km away), the Le Cesine MPA (approximately 93 km away), and the Montagna Spaccata e Rupi di San Mauro MPA (approximately 96 km away). In Albanian waters to the north, the Karaburun–Sazan Marine National Park is located approximately 79 km away. Further east, the Butrint National Park is located approximately 88 km away, encompassing a coastal wetland complex.

### 13.5.3.3 Fisheries restricted areas (FRAs)

The closest Fisheries Restricted Area to the project area is the Deep water fisheries restricted area (1,000 m), with its nearest boundary located approximately 9 km west/southwest from the exploration well. This FRA applies directly to portions of Block 2 where water depths exceed 1,000 m.

### 13.5.3.4 Forests and forested areas

The onshore support infrastructure of the Project is located entirely within the Port of Igoumenitisa, Municipal Unit of Igoumenitisa and not within the boundaries of the ratified and published forest map of Igoumenitisa (Initially Ratified Forest Map under Article 17 of Law 3889/2010 (as amended and in force), approved by GG 531/D/24 December 2018).

### 13.5.3.5 Water management plans

According to the 2nd Revision of the River Basin Management Plans for the Epirus River Basin District (EL05) approved by GG A' 71/17.05.2024, the study area lies within the Kalamas River Basin (EL0512). The marine zone includes the coastal water body "Igoumenitisa Bay" with code EL0512C0003H.

### 13.5.3.6 Flood risk management plans

According to 1st Revision of the Flood Risk Management Plan for the River Basin District of Epirus (EL05) was approved by Decision YPEN/DPDYP/61532/888 (GG 2775/B/05.06.2025), the study area falls within an Area of Potentially Significant Flood Risk named “Lower Reach – Delta of the Kalamas River and the Coastal Zone of Igoumenitsa”, with code EL05APSFR008 and an area of 70,5 km<sup>2</sup>.

### 13.5.4 Specific Emission Limit Values for Pollutant Loads and Concentrations According to Applicable Regulations

For ambient air quality levels, the following provisions apply:

- Joint Ministerial Decision (JMD) 14122/549/E103/24.3.2011 (GG B' 488): This decision establishes measures for the improvement of ambient air quality, in compliance with the provisions of Directive 2008/50/EC, as currently in force and amended.
- Joint Ministerial Decision (JMD) 22306/1075/E103/29.5.2007 (GG B' 920): This decision sets target values and assessment thresholds for the concentrations of arsenic, cadmium, mercury, nickel, and polycyclic aromatic hydrocarbons (PAHs) in ambient air, in compliance with the provisions of Directive 2004/107/EC, as currently in force and amended.
- Council of Ministers Act 25/18.3.88 (GG A' 52/22.3.88) and PYS 34/30.5.02 (GG A' 125/5.6.02), "Limit and guideline values for air quality regarding sulphur dioxide, nitrogen dioxide and nitrogen oxides, particulate matter, and lead."
- Presidential Decree 1180/81 (GG 293/A/1981) for point source emissions of solids (suspended particulates) from construction sites and project installations, the limit of 100 mg/m<sup>3</sup> established in Article 2, paragraph (d), applies.
- MARPOL Annex VI – Regulations for the Prevention of Air Pollution from Ships, sets limits on sulphur oxide and nitrogen oxide emissions from ship exhausts and prohibits deliberate emissions of ozone depleting substances.

For sewage from ships and other wastewater, the following apply:

- International Convention for the Prevention of Pollution from Ships, MARPOL 73/78
  - Annex I: Regulations for the Prevention of Pollution by Oil (Entered into force on October 2, 1983)
  - Annex IV: Prevention of Pollution from Ship Sewage (entered into force on September 27, 2003)
- Health Regulation No. E1β/221/1965 (GG B' 138), concerning the disposal of sewage and industrial wastewater, repealed by Law 4042/2012 (Article 59§2), but still referenced in practice for liquid effluent discharge limits per Circular No. οικ.191645/3.12.2013.

For waste from ships, and for solid and hazardous waste, the following apply:

- International Convention for the Prevention of Pollution from Ships, MARPOL 73/78, Annex V: Prevention of Pollution by Garbage from Ships (entered into force on December 31, 1998)
- For the management of used mineral oils, the provisions of Presidential Decree 82/2004 (GG A' 64/2.3.2004) apply, which replaced Joint Ministerial Decision 98012/2001/95 (GG B' 40/19-1-1996).
- For waste electrical and electronic equipment (WEEE), the provisions of Joint Ministerial Decision

23615/651/E.103/2014 (GG B' 1184) apply.

- For waste batteries and accumulators, the provisions of Joint Ministerial Decision 41624/2057/E103/2010 (GG B' 1625) apply.
- For source separation, collection, transport and management of solid waste, both recyclable and non-recyclable, the provisions of Law 4042/2012 (A' 24) as amended and in force, of the National Waste Management Plan ratified by Joint Ministerial Decision 51373/4684/2015 (B' 2706), and of Law 2939/2001 (A' 179) as amended by Law 4496/2017 (A' 170), apply.
- For source separation, collection, transport and management of hazardous waste, both recyclable and non-recyclable, the provisions of Law 4042/2012 (A' 24), as amended and in force, of the National Hazardous Waste Management Plan approved by Joint Ministerial Decision 62952/5384/2016 (B' 4326), and of Law 2939/2001 (A' 179) as amended by Law 4496/2017 (A' 170), apply.
- For the collection, transport and management of extractive waste, the provisions of Joint Ministerial Decision 39624/2209/E103/2009 "Measures, conditions and restrictions for the management of waste from the extractive industry in compliance with the provisions of Directive 2006/21/EC" apply.

The specific limit values for noise and vibration levels are determined by the following applicable regulations:

- Presidential Decree 57/2010 (GG 97/A/25.6.2010) – Adaptation of Greek Legislation to Directive 2006/42/EC of the European Parliament and of the Council “on machinery and amending Directive 95/16/EC,” repealing PDs 18/96 and 377/93, as amended by PD 81/2011 (GG 197/A/9.9.2011) “Amendment of PD 57/2010 (97/A) in compliance with Directive 2009/127/EC of the European Parliament and of the Council ‘amending Directive 2006/42/EC.’”
- JMD 56206/1613/86 (GG 570/B/1986) "Determination of the acoustic emission of construction site machinery and equipment in compliance with Directives 79/113/EEC, 81/1051/EEC, and 85/405/EEC of the Council of 19 December 1978, 7 December 1981, and 11 July 1985",
- JMD 69001/1921/88 (GG 751/B/1988) “EEC type approval for the noise level limit of construction machinery and equipment, specifically motorized air compressors, tower cranes, welding generator sets, power generator sets, and portable concrete breakers and pneumatic hammers,”
- Ministerial Decision 211773/2012 (GG 1367/B/2012), “Establishment of Evaluation Indicators and Maximum Permissible Limits of Environmental Noise Indicators resulting from the operation of transport infrastructure projects, technical specifications for special acoustic studies for the calculation and implementation (EAMYE) of noise barriers, specifications for environmental noise monitoring, and other provisions.”

## 13.6 Terms, measures and restrictions to be accounted for mitigation (prevention – minimization – remediation – restoration) of potential environmental impacts

### 13.6.1 General terms

The following environmental terms are proposed by the Project Operator for inclusion in the Environmental Terms Approval Decision (AEPO). Upon approval, the applicable environmental terms apply to Energean Hellas Ltd, as the Project Operator which will be responsible for complying with them.

They also apply to and must be followed by the contractors and by any natural or legal person assigned to carry out any part of the Project. All the above are referred to below as “third parties”.

When agreements are concluded between the Project Operator and third parties, as well as between third parties, they must include clear provisions requiring compliance with the environmental terms.

The Project Operator must take all necessary measures to ensure:

1. Compliance with the environmental terms by everyone involved in the Project and its supporting activities / operations.
2. The ability to respond to and restore situations that have an adverse effect on the environment as a result of acts or omissions that breach the environmental terms.
3. The Project Operator must comply with the applicable environmental legislation, whether or not it is specifically referred to in the environmental terms of the Project.
4. Project activities shall be carried out in accordance with the conditions of the existing operating permits, licences and land-use designations. Project activities at the Port of Igoumenitsa shall be carried out in accordance with the applicable Environmental Terms of the Port as amended and in force and tailored as needed within the present AEPO to support the specific workstreams.
5. Before any activity or installation needed to carry out the Project begins, all permits and approvals required under the applicable legislation must have been obtained.
6. When preparing the financial plan for the Project, the Project Operator must give priority to securing the funds required for environmental protection.
7. If works or activities are required as part of the Project that go beyond those covered by the Environmental Terms Approval Decision (AEPO) and described in the Environmental and Social Impact Assessment (ESIA), including any extension or modification of the Project, the procedure for amending the AEPO under Law 4014/2011 as in force and in accordance with Article 6 in case additional terms are deemed required or Article 7 in case minor adjustment(s) in accordance with final design of the operations, must be followed.
8. The Project Operator must establish an Environmental Unit, in the form of an organisational unit with an appropriate structure and position within the Project Operator’s organisation. The Environmental Unit will be responsible for the overall prevention, reduction and management of environmental impacts, including the following duties:
  - a. Monitoring compliance with the Environmental Terms.
  - b. Supervising and coordinating the implementation of environmental legislation.
  - c. Preparing proposals for measures and implementing programmes to meet the requirements of environmental legislation.
  - d. Environmental monitoring.
  - e. Liaising on all environmental matters with the local community, the internal organisational units of the Project Operator, third parties and the relevant public authorities.
9. The Project Operator must ensure that:

- a. The Environmental Unit has the responsibilities and authority, including an appropriate position within the organisational chart, needed to intervene effectively at all stages of the detailed design, implementation and decommissioning of the Project.
  - b. The duties of the Environmental Unit focus exclusively on environmental matters. These duties may be combined only with matters relating to the safety of the Project and its operations and/or the health and safety of personnel. The Unit must remain independent from other units within the Project Operator's organisational structure that carry out technical, administrative or financial duties.
  - c. The Environmental Unit is staffed with enough suitably qualified personnel and is provided by the Project Operator's management with the infrastructure and resources needed to operate effectively.
10. When the Project studies and designs are finalised, energy-saving measures, such as high-efficiency equipment must be included, where applicable.
  11. The Project Operator must provide any information requested by the Environmental Authority, namely the Directorate of Environmental Licensing (DIPA) of the Ministry of Environment and Energy, and the Hellenic Hydrocarbons and Energy Resources Management Company (HEREMA) throughout the duration of the Project.
  12. Before Project commencement, a comprehensive Environmental and Social Management Plan (ESMP) covering all works must be prepared. The ESMP shall be prepared and submitted for approval to DIPA where required by the applicable approval conditions and regulatory requirements. The results of its implementation must be submitted to DIPA at the end of the Project.

The EMP must include, in all cases:

- a. an analysis of how the environmental terms will be applied to all works and by all third parties involved;
- b. the way in which the monitoring and management programmes will be implemented, as well as the specifications of the related monitoring equipment;
- c. a review and assessment of how effectively the environmental terms have been applied to protect the natural and human environment, including the biodiversity, species and habitats of the area, as well as human economic activities, such as tourism and fisheries; and
- d. the results of the monitoring programme.

The conclusions of the ESMP will be used to determine whether there are any environmental impacts that were not identified in the original EIA and AEPO and whether additional terms must therefore be imposed or the original terms relating to demobilisation and abandonment must be amended.

## 13.6.2 Mobilization and drilling operations

### 13.6.2.1 Air quality, climatic and bioclimatic characteristics

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13. Logistics activities, including support-vessel operations and the operation of onshore vehicles and machinery, shall be planned and managed by the relevant Contractors, in coordination with the Project Operator and the relevant facility operators. Such planning and management shall aim to minimise

unnecessary engine operation, idling and associated atmospheric emissions, to the extent permitted by operational and scheduling constraints.

14. All Project Contractors shall maintain the machinery, vessels and vehicles used for the Project in accordance with the manufacturers' specifications and maintenance schedules, in order to reduce exhaust emissions. Maintenance shall be carried out by the relevant contractor or owner at licensed onshore facilities, where practicable.
15. The Mobile Offshore Drilling Unit (MODU) and all Project support vessels shall comply with the requirements of MARPOL Annex VI, including the applicable fuel-quality and air-emission requirements relating to ozone-depleting substances, nitrogen oxides (NO<sub>x</sub>), sulphur oxides (SO<sub>x</sub>) and volatile organic compounds (VOCs).
16. The Project Operator shall coordinate with the relevant Contractors, the Port Authority and Corfu International Airport to optimise support-vessel and helicopter logistics through appropriate voyage and flight planning. Planning shall take account of the operational requirements of the drilling unit and shall aim to minimise vessel trips, the duration of activities within the Project area and unnecessary engine operation or idling, to the extent permitted by the operational constraints of the parties involved.
17. The Project Operator shall assess, in coordination with the operator of the Port of Igoumenitsa and the relevant vessel operators, whether existing shore-power facilities can be used by Project vessels while alongside. Shore power may be used where the existing infrastructure is available and compatible with the vessel and where the necessary technical, safety, operational and commercial arrangements have been agreed between the relevant parties. The Project shall not include the installation or substantial upgrading of shore-power infrastructure at the port.
18. LED lighting shall be used for internal lighting, where practicable, and unnecessary operation of external lighting shall be avoided.

#### 13.6.2.2 Morphology and Landscape

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19. The Project shall use existing facilities at the Port of Igoumenitsa and Corfu International Airport (CFU). No new permanent onshore or offshore infrastructure, dredging, land reclamation or quay modifications shall be undertaken. All Project activities shall remain within designated operational areas. Onshore Project-support activities shall be carried out only within areas allocated or agreed for Project use by the relevant facility operator.
20. Project equipment, materials, vehicles and waste shall be stored, handled and parked only within designated areas, except while being transported in accordance with the applicable logistics and waste-management arrangements. Unauthorised disposal or storage outside the designated Project areas shall be prohibited.
21. The Project shall use the existing surfaced areas of the onshore logistics base. No additional permanent impermeable surfacing shall be constructed. If additional surfacing is subsequently required for the safe operation of the Project, it shall be limited to the minimum area necessary, shall be located within the area allocated for Project use and shall be subject to prior agreement with the Igoumenitsa Port operator and to any applicable approvals. Any reinstatement requirements shall also be agreed with



the Port operator.

22. During well operations at the Asopus-1 location, the MODU shall maintain its position using a dynamic-positioning system meeting IMO Dynamic Positioning Equipment Class 3 requirements or an equivalent Class 3 notation accepted by the relevant Flag State and classification society. Anchoring shall not be used for routine station-keeping during the drilling operations.

### 13.6.2.3 Waste and wastewater management

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23. No hazardous waste shall be intentionally discharged into the marine environment.
24. Operational discharges, including drilling fluids and cuttings, sewage, bilge water, ballast water and food waste, shall be managed in accordance with applicable legal requirements.
25. Hazardous and non-hazardous waste generated offshore shall be segregated, stored, handled and transferred to authorised port-reception or waste-management facilities in accordance with the Project Waste Management Plan and the applicable requirements of MARPOL, Barcelona Convention and its Offshore Protocol, and applicable EU and Greek legislation.
26. Fuels, chemicals and any materials identified as hazardous under the applicable legislation or the relevant Safety Data Sheet shall be stored in designated areas at the logistics base.
27. Storage areas for fuels, chemicals and hazardous materials shall be provided with secondary containment and appropriate segregation, taking account of the nature and quantity of the materials and the associated spill risk.
28. Suitable spill-response materials and equipment shall be readily available at the relevant storage, transfer and handling locations, in accordance with the applicable site procedures and the Project spill-response arrangements.
29. Cementing discharges shall be managed in accordance with the Chemical Use Plan, the assessed discharge arrangements, the applicable regulatory requirements and, where relevant, the Waste Management Plan.
30. Unused, excess or waste pipe dope, contaminated rags or absorbents and empty containers shall be collected and segregated. Such materials shall be managed in accordance with the Project Waste Management Plan and the applicable MARPOL requirements and shall be transferred through the supply base to authorised onshore waste-management facilities.
31. Drilling cuttings and water-based drilling fluids discharged at the seabed during the riserless drilling sections shall be managed in accordance with the applicable regulatory requirements, including Barcelona Convention Offshore Protocol and the relevant UNEP/MAP Common Standards and Guidelines for the use and disposal of drilling fluids and cuttings in the Mediterranean.
32. Drilling cuttings and associated drilling fluids generated after installation of the marine riser shall be managed in accordance with the applicable regulatory requirements, including Barcelona Convention Offshore Protocol and the relevant UNEP/MAP Common Standards and Guidelines. Drilling returns shall be monitored through logging while drilling, mudlogging and routine observation.
33. Where cuttings or drilling returns are identified as mixed with reservoir hydrocarbons at concentrations

that make them unsuitable for discharge under the applicable requirements, discharge of the affected material shall cease immediately. The affected cuttings and fluids shall be contained onboard and transferred ashore for management at an authorised facility.

34. Sanitary wastewater, including blackwater and greywater, shall be managed and discharged in accordance with MARPOL Annex IV and the applicable Greek legislation. Blackwater shall be treated in an approved sewage-treatment system before discharge. Where the applicable discharge requirements cannot be met, sewage shall be retained in holding tanks and shall either be discharged once the applicable requirements can be met or be transferred to an authorised shore-reception facility.
35. Bilge water collected from machinery spaces shall be routed to dedicated bilge holding tanks, to be processed through the oily-water separator, fitted with a certified oil-content monitor and an automatic stopping device. The oily-water separator and oil-content monitor shall be type-approved in accordance with MARPOL Annex I and applicable MEPC.107(49) requirements, by the Flag State Administration or a Recognized Organization acting on its behalf. Treated bilge water may be discharged only where the oil content of the undiluted effluent does not exceed 15 mg/L or 15 ppm and all other applicable MARPOL Annex I discharge conditions are met.
36. Deck drainage from non-hazardous areas may be discharged through the vessel's drainage system. Any impacted runoff shall be contained and managed through the vessel's applicable drainage and treatment arrangements, including the oily-water separator, where applicable. Where oily deck drainage is treated through an oily-water separator, the oil content of the discharge shall not exceed 15 mg/L or 15 ppm. Deck drainage may be discharged into the sea only where discharge is permitted under the applicable MARPOL, Flag-State and vessel requirements and no visible oil sheen will result.
37. Cooling water shall be discharged through multiple outlets. The temperature difference between the cooling-water intake and discharge shall not exceed 5 °C. Cooling-water discharges shall be managed in accordance with the MODU's approved systems and procedures and the applicable environmental requirements. Cooling-water discharge shall consist of non-contact seawater and shall not contain oil or harmful substances.
38. Ballast water on the MODU and Project support or supply vessels shall be managed in accordance with:  
a. the Ballast Water Management Convention; b. Regulations B-1 and D-1 or D-2, as applicable; c. the approved Ballast Water Management Plan; and d. the Ballast Water Record Book. Any ballast-water management system installed onboard shall be type-approved by the Flag State Administration, or by a Recognized Organization acting on its behalf, in accordance with Regulation D-3 of the Ballast Water Management Convention.
39. Brine streams may be discharged only where they do not contain oil, harmful substances, or other contaminants introduced by machinery and waste streams. Brine discharges shall comply with the applicable MARPOL requirements, Greek environmental legislation and vessel procedures. Any discharge containing oil or oily residues shall be managed separately in accordance with MARPOL Annex
40. Food waste may be discharged only in accordance with the location and operational conditions applicable to the MODU and Project vessels under MARPOL Annex V, including the applicable minimum distance from the nearest land. Food waste intended for permitted discharge shall be comminuted or ground so that it can pass through a screen with openings no greater than 25 mm. Food waste mixed

with any other waste shall not be discharged into the sea.

41. No planned discharge from the MODU or Project vessels shall take place where, at the time of the proposed discharge, the vessel is located within: a. the Ionian Archipelago Important Marine Mammal Area; or b. the Nisoi Paxoi Kai Antipaxoi Kai Evryteri Thalassia Periochi Natura 2000 site, code GR2230003.

#### 13.6.2.4 Chemicals use and management

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42. A Chemical Use Plan shall be implemented throughout drilling operations. The Chemical Use Plan shall include:
  43. the chemicals proposed for planned and contingency operations and the relevant environmental-hazard and ecotoxicity information;
  44. the purposes for which each chemical is intended to be used;
  45. the estimated concentrations and quantities of the chemicals intended to be used; and
  46. the potential routes and locations through which chemicals may be discharged into the marine environment, where applicable.
47. The selection, use and discharge of chemicals shall be controlled through the Project Chemical Use Plan. Drilling fluids, drilling cuttings and chemicals shall be managed in accordance with:
  48. the Project Chemical Use Plan;
  49. the Project Waste Management Plan;
  50. applicable regulatory requirements.
51. Only water-based drilling muds shall be used. No planned use of oil-based or other non-aqueous drilling fluids shall be permitted.
52. Preference shall be given, as applicable, to substances, drilling and cementing chemicals included on the PLONOR list and to products classified as CHARM Gold or OCNS Group E, where they are operationally suitable and available. Other chemicals may be used for planned or contingency operations only where a. their suitability has been reviewed; and b. no suitable lower-hazard alternative is reasonably available.
53. The use and discharge of substances covered by Annex I to the Barcelona Convention Offshore Protocol shall be prohibited, except where permitted under the applicable regulatory framework. Chemicals with higher-hazard classifications may be used only where: a. they are required to perform a specific technical function; and b. no suitable lower-hazard alternative is reasonably available.
54. No well-completion, stimulation or production-related chemicals shall be used as part of the Project.
55. Chemical transfer, storage and handling offshore shall be controlled through measures including, as applicable, appropriate containment, spill-prevention measures, bunding and closed-drainage systems, use of trained personnel and chemical inventory management.
56. Pipe dope and casing dope shall be treated as non-discharged chemicals. Their application shall be

controlled so as to minimise excess material and prevent any planned discharge into the sea. The use of pipe dope shall be controlled under the Chemical Use Plan, and pipe dope shall not be intentionally discharged into seawater. Any accidental spill of pipe dope shall be managed in accordance with the Project spill-response procedures.

#### 13.6.2.5 Noise and vibration

57. Material-handling and cargo operations at the logistics base shall be carried out by the relevant Contractors in accordance with the operating procedures of the Port of Igoumenitsa.
58. The drillship, support vessels, helicopters, generators and other relevant mechanical equipment shall be routinely inspected and maintained in accordance with the applicable maintenance programmes and manufacturers' recommendations. Equipment used for material-handling and cargo operations shall be maintained in good working order in order to minimise unnecessary noise emissions.
59. Support-vessel operations shall be coordinated by the Project Operator in cooperation with the relevant Contractors and taking account of the operational and safety requirements of the facility operator, the vessels and the drilling unit.
60. Support-vessel operations shall be planned, where reasonably practicable, so as to minimise underwater noise and unnecessary engine operation and idling.
61. All Vertical Seismic Profiling operations shall begin with a soft-start or ramp-up procedure, during which acoustic energy shall be increased gradually from low power to full operational power over a period of 20–30 minutes.
62. The soft-start procedure shall be implemented in accordance with the Marine Mammal Mitigation Plan.
63. The duration of Vertical Seismic Profiling operations shall be limited to the period reasonably necessary to achieve the survey objectives.

#### 13.6.2.6 Marine life, flora, fauna, habitats and protected areas

64. A Marine Mammal Mitigation Plan shall be prepared before the commencement of impulsive sound emissions. The Marine Mammal Mitigation Plan shall set out the mitigation protocol to be implemented by the relevant Contractors during the Vertical Seismic Profile operation. The mitigation protocol shall include visual monitoring by a qualified Marine Mammal Observer (MMO) and, where applicable, Passive Acoustic Monitoring, in order to detect marine mammals and manage the risk of injury from impulsive noise, continuously throughout VSP activities and optionally for the rest of the drilling campaign.
65. Before the commencement of Vertical Seismic Profiling operations, certified Marine Mammal Observers shall undertake a pre-shooting visual search for marine mammals and sea turtles within the 500 m mitigation zone specified in the Marine Mammal Mitigation Plan. The duration of the pre-shooting search and the applicable ramp-up, delay, shutdown and restart procedures shall be implemented in accordance with the Marine Mammal Mitigation Plan and the applicable regulatory requirements.
66. During Vertical Seismic Profiling operations, two Marine Mammal Observers holding ACCOBAMS

certification or an equivalent recognised qualification shall be positioned at suitable observation points onboard the vessel.

67. One or more suitably qualified Passive Acoustic Monitoring operators shall be provided where required under the Marine Mammal Mitigation Plan during Vertical Seismic Profile (VSP) operations if and such operation are carried out and are extended during the night, including for monitoring during darkness or poor visibility.
68. The following shall be recorded using the applicable reporting forms: a. marine-mammal sightings; b. sea-turtle sightings; c. pre-shooting searches; d. delays; e. soft-starts; f. shutdowns; and g. any other mitigation actions implemented. Monitoring records shall be submitted in accordance with the Marine Mammal Mitigation Plan.
69. All acoustic-source tests shall begin with a soft-start or ramp-up, gradually increasing acoustic energy from low power to full operational power over a period of 20–30 minutes. If a marine mammal or sea turtle is detected within the 500 m mitigation zone before the commencement of acoustic operations, the operations shall be delayed until the animal has left the mitigation zone and at least 20 minutes have elapsed since the last visual sighting, or any longer period specified in the Marine Mammal Mitigation Plan.
70. Within areas identified in the Marine Mammal Mitigation Plan as having a higher presence of marine mammals, Project vessels shall operate at speeds not exceeding 14 knots, or at their maximum operational speed where this is lower. The vessel-speed restriction shall apply provided that it does not compromise vessel safety or emergency-response capability.
71. Project vessels shall maintain a safe distance from any observed marine mammal. Project vessels shall not approach marine mammals head-on and shall avoid crossing or waiting ahead of their direction of travel. Where safe and practicable, vessels shall steer behind the animal's path.
72. In the event of a collision between a Project vessel and a marine mammal or sea turtle, the vessel Master shall immediately report the incident to the Project Operator in accordance with the Project incident-reporting procedure. Following such an incident, the Project Operator shall notify the competent environmental and other relevant authorities as soon as reasonably practicable and within any applicable regulatory timeframe, in accordance with the applicable legislation.
73. Project vessels shall follow established transit routes, where practicable, during drilling preparation and mobilisation. Vessel transit shall be undertaken in accordance with standard vessel-transit procedures, including the issue of applicable navigational notifications, such as NAVTEX messages, and coordination with the competent maritime authorities. The vessel Master may deviate from established routes where required for safety reasons.
74. Before spudding the well, a remotely operated vehicle survey shall be carried out within a radius of 70 m from the planned wellhead location to identify any pre-existing seabed features or sensitivities. If previously unidentified seabed features or sensitivities are identified within the surveyed area, the relevant competent authorities shall be informed.
75. Appropriate screens or equivalent protective measures shall be fitted to the drillship's seawater intakes in order to minimise the risk of entrainment of marine flora and fauna.

76. Light emissions shall be minimised during night-time hours, as far as practicable, while maintaining safe operations and compliance with navigational requirements. Directional lighting shall be used, where practicable, to minimise light spill onto the sea. External lighting shall comply with all applicable maritime, aviation, Flag-State and operational-safety requirements. Where practicable without affecting applicable safety requirements, non-essential external lighting shall be positioned, directed or shielded so as to minimise unnecessary upward and outward light spill, particularly during bird-migration periods. Where fitted, blinds or other available screening shall be used on accommodation windows during hours of darkness, where practicable, to minimise unnecessary outward light spill, particularly during bird-migration periods.
77. Helicopter flights shall be planned and carried out by the helicopter operator in accordance with applicable aviation requirements, air-traffic-control instructions and procedures. Where safe and operationally practicable, helicopter flight routes and altitudes shall be selected so as to avoid unnecessary overflight of known bird-breeding, roosting or concentration areas identified as relevant to the Project.

#### 13.6.2.7 Maritime uses and navigation

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78. Subject to approval by the competent Greek authorities, a safety zone with a radius of 500 m around the MODU shall be established and officially notified for the duration of the well operations. Unauthorised access by vessels to the safety zone shall be restricted in accordance with the applicable authorisation and maritime notices. Information concerning the establishment and duration of the safety zone and the relevant operational details shall be communicated through official maritime-safety information channels. The relevant information shall include NAVTEX messages, navigational warnings and, where applicable, Notices to Mariners issued or coordinated by the Hellenic Navy Hydrographic Service in cooperation with the competent Hellenic Coast Guard authorities.
79. While on site, the Platform Supply Vessels (PSVs) shall assist the MODU, as required, in monitoring the safety zone and communicating with approaching vessels.
80. Before mobilisation and demobilisation, the Project Operator shall ensure that the drilling contractor liaises with the Hellenic Navy Hydrographic Service regarding the planned drilling and vessel-transit operations, in accordance with standard drilling-unit mobilisation procedures.
81. The main operators of cruise ships and LPG carriers identified through the Shipping and Navigation Assessment as regularly passing within or close to 500 m of the drilling location shall be informed in advance of the Asopus-1 operations. Such notification shall supplement the applicable official navigational notifications, including NAVTEX messages and Notices to Mariners, and shall enable vessel operators to review or amend their passage plans, where necessary.
82. The Offshore Installation Manager (OIM) and the Master of each support vessel shall have overriding authority and responsibility for decisions relating to safety and pollution prevention, in accordance with the International Safety Management Code.
83. The MODU and all Project support vessels shall comply with the applicable international and national maritime legislation, including COLREGs, and shall display the required lights, shapes and signals.

84. The owners or operators of the Platform Supply Vessels (PSVs) shall ensure that each vessel:
85. displays the applicable lights and marks;
86. operates the Automatic Identification System, where required; and
87. complies with the applicable international, Flag-State and coastal-State requirements, including Greek legislation, COLREGs and SOLAS.
88. Regular and timely communication shall be maintained throughout mobilisation with the Hellenic Coast Guard, relevant fisheries organisations, Port Authorities of Igoumenitsa and Corfu, the operator of Corfu International Airport and other key stakeholders identified by the Project.
89. Where practicable, mobilisation logistics at the Port of Igoumenitsa shall be scheduled in coordination with the Port Authority to minimise disruption to routine commercial and passenger operations at the port.
90. The MODU shall have a vessel-specific Collision Risk Management Plan informed by the site-specific Shipping and Navigation Assessment. The Collision Risk Management Plan shall address collision risks arising while the MODU is restricted in its ability to manoeuvre and engaged in well operations. The Collision Risk Management Plan shall include indicatevely and not exhaustively the following: a. measures to provide adequate warning time; b. continuous monitoring of marine traffic by competent watchkeeping personnel; c. use of AIS, ARPA and other available navigational aids; d. appropriate communications with approaching vessels; and e. display of the lights, shapes and signals corresponding to the MODU's operational status.

#### 13.6.2.8 Cultural Heritage

91. All project activities shall be governed principally by Law 4858/2021 (Code of Legislation for the Protection of Antiquities and Cultural Heritage) and informed by the principles of the UNESCO Convention on the Protection of the Underwater Cultural Heritage (2001) to ensure the appropriate management and, where practicable, in situ preservation of submerged archaeological resources.
92. Prior to the commencement of drilling activities, the Company shall submit to the Hellenic Ephorate of Underwater Antiquities the results of the detailed seabed survey of the marine area at the proposed Asopus-1 well location for review with respect to the potential presence of underwater cultural heritage. Based on the results of this review, and if deemed necessary by the Ephorate, an on-site underwater archaeological survey using technology (ROV, SSS, Sub bottom profiler shall be provided in the marine area where the exploration drilling is planned to take place. The cost of conducting this survey must be covered by the Project Owner.
93. Any additional geophysical, environmental or engineering datasets acquired before drilling that provide materially relevant new seabed information for areas subject to planned Project disturbance shall be reviewed to determine whether they materially change the archaeological baseline or require further archaeological assessment and/or notification to the Competent Authority.
94. Although no archaeological remains have been identified within the immediate Project footprint, the Chance Find Procedure shall be implemented if material of possible archaeological significance is encountered. The Chance Find Procedure shall include the following actions:



- 95. the affected activity shall be stopped to the extent necessary to avoid disturbance;
- 96. the location and nature of the suspected find shall be recorded;
- 97. practicable controls shall be applied to avoid further disturbance;
- 98. photographic or video documentation shall be obtained, where practicable;
- 99. advice shall be obtained from an appropriately qualified maritime archaeologist where required to support notification, preliminary interpretation or the response requested by the competent authority;
- 100. the designated Project representative shall notify the Ephorate of Underwater Antiquities within the timeframe required by applicable legislation and provide relevant information concerning the suspected find.

#### 13.6.2.9 Community and occupational health and safety

- 101. Appropriate personal protective equipment shall be provided to and used by all personnel where required by the task or work area, in accordance with the applicable procedures at the onshore logistics base and during marine operations. Project Operator and each Contractor shall be responsible for ensuring that its personnel comply with the Project requirements concerning personal protective equipment.
- 102. The Project Operator and each Contractor shall maintain appropriate personnel training and competence systems. Personnel shall receive Project-specific briefings on marine operations, traffic management and emergency response, as applicable.
- 103. Lifting operations shall be carried out by a Contractor qualified to perform lifting operations, using personnel with the required competence and qualifications.
- 104. Emergency-response drills shall be conducted at the intervals specified in the Project and vessel emergency-response procedures and in accordance with the applicable legal and Flag-State requirements. Emergency drills shall include, as applicable, fire-response, medical-evacuation, man-overboard and oil-spill-response exercises.
- 105. The Onshore Traffic Management Plan shall be reviewed/updated by the relevant logistics contractor once appointed. Any changes should be reviewed by the Port Authority and approved by the Project Operator prior to implementation. The Plan shall be updated during operations, as necessary, in response to relevant changes.
- 106. The installation of the temporary helicopter hangar and the associated helicopter operations at Corfu International Airport shall comply with the applicable civil-aviation safety procedures and the requirements of the airport operator.
- 107. The drillship shall maintain an Emergency Response Plan setting out the procedures to be followed in an emergency.
- 108. The MODU shall also maintain Well-Specific Operating Guidelines (WSOG) developed in accordance with IMCA M103 guidance for dynamically positioned drilling units and informed by the applicable station-keeping, riser and emergency-disconnect analyses. The Well-Specific Operating Guidelines shall

define: a. the applicable operating limits for the MODU; b. alert conditions and status levels; and c. the actions to be taken following loss or degradation of position. Where required by the WSOG and the associated MODU-procedures, the Emergency Disconnect Sequence (EDS) shall be initiated to secure the well and allow the MODU to disengage safely.

109. Sealed radioactive sources may be used only where required for formation-evaluation tools, including specific well-logging or logging-while-drilling tools. The use, storage and transport of sealed radioactive sources shall be managed by the relevant licensed Contractor in accordance with radiation-protection requirements and applicable authorisations of the Greek Atomic Energy Commission.

### 13.6.3 Demobilisation and abandonment

110. The exploration well shall be plugged and abandoned in accordance with the accepted Notification of Well Operations (NoWO), applicable regulatory requirements, the approved Plug and Abandonment (P&A) programme and Good International Industry Practice (GIIP), to provide long-term well integrity and prevent unintended releases to the marine environment.

#### 13.6.3.1 General decommissioning and site-restoration requirements

111. Plugging and abandonment shall be carried out so as to ensure long-term well integrity and prevent unintended releases into the marine environment.
112. Temporary subsea equipment deployed during the drilling campaign, including the marine riser, blowout preventer and acoustic-positioning transponders, shall be recovered following completion of the well operations.
113. Following plugging and abandonment and recovery of the temporary subsea equipment, a remotely operated vehicle seabed survey shall be carried out within a radius of 70 m from the well location.
114. The post-operation seabed survey shall identify any Project-related debris. Any non – cuttings related debris identified shall be documented and managed in accordance with the applicable operational and regulatory requirements.
115. Project equipment, materials, chemicals and waste remaining on the MODU or at the onshore support facilities after completion of their use shall be removed or otherwise managed in accordance with the Project Waste Management Plan. Materials shall be reused or recycled where reasonably practicable. Waste shall be transferred to authorised waste-management facilities.
116. Temporary Project facilities, equipment, signage and operational arrangements at the Port of Igoumenitsa and Corfu International Airport shall be removed, retained or otherwise managed in accordance with the arrangements agreed with the relevant facility operator. Areas used by the Project shall be left in the condition agreed with the relevant facility operator.
117. Records relating to plugging and abandonment, recovery of temporary subsea equipment, waste transfers and post-operation inspections shall be maintained. Such records shall be submitted to the competent authorities where required under the applicable regulatory requirements.
118. Permanent cement barriers shall be installed to provide long-term isolation of the well. The permanent

well barriers shall be verified using methods appropriate to the type of barrier and well conditions, according to the accepted Notification of Well Operations and approved well programme.

119. Following completion of the plugging and abandonment operations, the competent authorities (Hellenic Coast Guard, Port Authorities of Igoumenitsa and Corfu) and relevant marine users shall be informed of the departure of the MODU and the cessation of the Project activities.
120. Decommissioning and demobilisation activities shall be planned and coordinated with the relevant port and airport facility operators. Activity timing and arrangements shall, where reasonably practicable, be adjusted to minimise disruption to other facility users, without compromising safety, emergency-response, asset integrity or operational requirements.
121. Decommissioning and demobilisation activities shall be carried out so as to avoid unnecessary disruption to existing infrastructure and navigation routes, where reasonably practicable and without compromising safety, asset integrity, emergency response or operational requirements.
122. The Project Operator shall coordinate with the relevant Contractors, the Port Authority and Corfu International Airport to optimise support-vessel and helicopter logistics through appropriate voyage and flight planning.
123. Logistics planning shall take account of the operational requirements of the MODU and shall aim to minimise the number of vessel trips, reduce the duration of activities within the Project area and avoid unnecessary engine operation and idling. These measures shall be implemented to the extent permitted by the operational constraints of the parties involved.
124. Hazardous and non-hazardous waste generated offshore shall be identified, segregated, stored, handled and transferred to authorised port-reception or waste-management facilities. Waste management shall comply with:
  - the Project Waste Management Plan;
  - the applicable requirements of MARPOL;
  - the Barcelona Convention and its Offshore Protocol; and
  - applicable EU and Greek legislation.
125. No solid or hazardous waste shall be intentionally discharged into the marine environment.
126. Operational discharges, including drilling fluids and cuttings, sewage, bilge water, ballast water and food waste, shall be managed in accordance with applicable legal requirements.

#### 13.6.4 Minimization of environmental consequences from an incident or accidental release

##### 13.6.4.1 Emergency response plan

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127. Before the commencement of drilling operations, the Project Operator shall prepare and maintain a Project Emergency Response Plan (ERP), which will be submitted and approved. It will cover foreseeable emergency scenarios associated with the Project. The Plan shall define the emergency-response organisation, roles and responsibilities, command and communication arrangements, notification and

escalation procedures, available response resources, coordination with Contractors and competent authorities, and procedures for evacuation, rescue, medical emergencies, well-control events, fire, explosion, toxic-gas releases, marine incidents, spills and other accidental releases.

128. The Emergency Response Plan (ERP) shall be coordinated with the applicable MODU and vessel emergency plans, including the Shipboard Oil Pollution Emergency Plan, and shall comply with the applicable international, EU, Greek, Flag-State and port-State requirements.

129. The Emergency Response Plan (EPR) shall be available throughout Project operations, communicated to relevant personnel and Contractors, and tested through regular drills and exercises. It shall be reviewed and updated following significant changes to the Project, changes to the assessed emergency scenarios, lessons identified through drills or incidents, or instructions issued by the competent authorities.

#### 13.6.4.2 Contingency activities triggered by unfavourable operational circumstances

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130. Contingency activities shall be undertaken only in response to unforeseen technical, geological, well-integrity or operational conditions and in accordance with the approved well programme, the applicable management-of-change procedure and any regulatory notification, acceptance or environmental-permitting requirements.

131. Any contingency activity that falls outside the Project design envelope assessed in the Environmental Impact Assessment will not be undertaken unless any additional environmental assessment, permitting or approval requirements have first been completed, where applicable.

132. Where re-spudding or sidetracking is required, the affected section of the original wellbore shall be isolated using an appropriate well barrier or mechanical isolation system. Additional drilling fluids, cuttings, cement and waste generated shall be managed in accordance with the approved Chemical Use Plan, Waste Management Plan and applicable discharge requirements.

133. Where disconnection of the MODU from the well is required, the well shall be secured using the applicable well barriers and disconnection procedures before the MODU moves away from the well location.

134. Operations shall not resume following a failure or degradation of a well barrier until the affected barrier has been restored or replaced and its integrity has been verified.

135. Any release of drilling fluids, cuttings or other riser contents resulting from an emergency disconnection shall be recorded and reported to the competent authorities where required and shall be managed in accordance with the applicable emergency-response and environmental-monitoring procedures.

136. Tool components, severed tubulars and other materials arising from contingency operations shall be recovered where safe and technically practicable. Any material that cannot be recovered shall be documented and reported to the competent authority where required.

#### 13.6.4.3 Well-control and source-control arrangements

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137. Well control shall be maintained through appropriate primary, secondary and, where required, tertiary

well-control measures in accordance with the approved well programme, the accepted Notification of Well Operations and the applicable well-control and well-integrity requirements.

138. Source-control arrangements proportionate to the assessed well-release scenarios shall be available throughout the drilling campaign and shall include as applicable, blowout-preventer intervention, subsea capping and relief-well arrangements.
139. In the event of a blowout or other loss of well control, drilling operations shall cease immediately, and the well shall be secured using the applicable well-control and emergency-isolation equipment. In the unlikely scenario where control cannot be restored, the applicable source-control arrangements defined in the Project Emergency Response Plan, Oil Spill Response Plan, and/or Source Control Emergency Response Plan shall be initiated.

#### 13.6.4.4 Spill and pollution response

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140. Oil-pollution incidents shall be managed in accordance with the applicable Shipboard Oil Pollution Emergency Plan and the Project Emergency Response Plan.
141. Accidental releases of chemicals or hazardous substances shall be managed in accordance with the relevant vessel and Project emergency procedures, taking account of the substance released, its Safety Data Sheet and the nature and scale of the incident.
142. The source of any spill shall be controlled where safe and practicable, and the activity causing the release shall be suspended or isolated. Appropriate containment, recovery and environmental-protection measures shall be implemented without delay.
143. Where a spill exceeds the available onsite response capability, the competent authorities shall be notified without delay and additional response resources shall be mobilised in accordance with the applicable spill-response arrangements.
144. Chemical dispersants shall not be used without prior approval from the competent authority.
145. Environmental monitoring, waste management and surveillance of the affected area shall continue, as appropriate, until the competent response personnel determine that response and recovery operations have been completed.

#### 13.6.4.5 Marine navigation and collision risk

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146. A vessel-specific Collision Risk Management Plan, based on the site-specific Shipping and Navigation Assessment, shall be implemented throughout the period during which the MODU is engaged in well operations.
147. Marine traffic around the MODU shall be continuously monitored by competent personnel using AIS, ARPA and other available navigational aids.
148. Where an imminent collision risk cannot be controlled through warnings or support-vessel intervention, the applicable dynamic-positioning, emergency-response and well-disconnection procedures shall be implemented.

#### 13.6.4.6 Loss of station-keeping

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149. Loss or degradation of MODU station-keeping shall be managed in accordance with the approved Well-Specific Operating Guidelines and the applicable MODU procedures.

150. Where loss of station-keeping may affect well integrity or result in an accidental release, the well shall be secured and the MODU shall disconnect and move away from the well location.

#### 13.6.4.7 Radiological incidents

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151. In the event of an incident involving a sealed radioactive source, the affected work shall cease immediately, the area shall be isolated and access shall be restricted.

152. The incident shall be managed by suitably qualified radiation-protection personnel in accordance with the licensed Contractor's approved procedures, the applicable radiation-protection legislation and the requirements of the Greek Atomic Energy Commission.

153. The competent authorities shall be notified within the period required by the applicable legislation and authorisations.

#### 13.6.4.8 Adverse Weather and Flooding

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154. Weather conditions, wind forecasts and flood warnings relevant to offshore operations and onshore support facilities shall be monitored throughout the Project.

155. Lifting operations, vessel transfers, offshore personnel transfers and helicopter operations shall be postponed, suspended or rescheduled where the applicable weather-related operating limits are approached or exceeded.

156. Where adverse weather is forecast or encountered that may exceed, or are expected to exceed, the applicable operational limits, the well shall be placed in a safe condition and Project equipment, chemicals and hazardous materials shall be secured or protected, in accordance with the applicable MODU procedures and Well-Specific Operating Guidelines (WSOG).

157. Project-critical equipment, electrical systems, chemicals and hazardous materials at the Port of Igoumenitsa and Corfu International Airport shall be located or protected taking account of the applicable flood risk.

158. Where forecast or actual flooding may affect Project operations, mobile equipment, chemicals and hazardous materials shall be secured, protected or relocated, and access and logistics arrangements shall be reviewed in coordination with the relevant facility operator.

### 13.6.5 Monitoring

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An Environmental and Social Monitoring Programme shall be implemented throughout the Project activities in order to verify compliance with the applicable environmental requirements and monitor the effectiveness

of the mitigation measures. The detailed Programme, its implementation means and its timeline for execution, is presented in detail in Table 12-4 of Chapter 12.2.2 of the present ESIA.

The Monitoring Plan for the Asopus-1 Exploration Drilling Project in Block 2 will be fully aligned with all applicable legal, regulatory, and international industry standards and best practices, as well as the provisions set out in YPEN SEA Approval No. 30373/2017.

Should new legal or regulatory obligations emerge, the Environmental and Social Monitoring Plan will be extended or adapted accordingly.

The proposed Environmental and Social Monitoring Plan for the Project, covering applicable compliance monitoring and environmental-effects monitoring during the drilling preparation and mobilisation, drilling, and decommissioning/abandonment phases.

The findings of the ESMP during the implementation of the Project will be summarized in an Environmental and Social Monitoring Report, which should be formulated in a way that is understandable to the public and made public via the internet. The report will be communicated to the Ministry of Environment and Energy, which exercises responsibilities for environmental licensing, environmental inspection and control, as well as management of biodiversity and protected areas.

Records relating to environmental monitoring, plugging and abandonment, subsea-equipment recovery, waste transfers and post-operation inspections shall be retained and submitted to the competent authorities where required.

Where monitoring identifies non-compliance or ineffective mitigation, proportionate corrective actions shall be implemented.

### **13.7 Duration of validity of the environmental terms approval decision – Conditions for renewal and modifications**

1. The environmental terms of this decision are valid for fifteen (15) years from the date of its issuance, subject to Article 2, paragraphs 8a and 9 of Law 4014/2011 (GG 209/A') as in force, and Article 1, paragraph 1 of Law 4685/2020 (GG 92/A'), provided that there is no change in the conditions on the basis of which it was issued. Its validity may be extended for six (6) years if the project has an Environmental Management System based on the "Eco-Management and Audit Scheme" (EMAS) standards, for as long as the System remains in force, and for four (4) years if the project has an Environmental Management System certified under ISO 14001 or another equivalent standard, for as long as the System remains in force. For the above extensions, a relevant certification act is issued. Failure to timely renew the above Environmental Management Systems results, during the period of such extensions, in the automatic expiration of the Environmental Terms Approval Decision (AEPO). Additionally, the project operator is required to maintain a valid Environmental Management System for at least one (1) year prior to the expiration of the AEPO renewal deadline.
2. Before the expiration of this period, the project operator must initiate the process for the renewal of the environmental terms, as specified in Article 5 of Law 4014/2011, as in force. According to the same



article, if the renewal dossier is submitted on time (at least two months prior to the expiration of validity), the environmental terms remain in effect for the period until the completion of the renewal process.

3. Compliance with Article 6 and/or Article 7 of Law 4014/2011, as in force, is required for the any modification or specialisation following operations design finalisation of the project activities and its support operations, as described in Section 1 of this decision and implemented in accordance with the Environmental Terms.
4. In the event that regular or extraordinary environmental inspections identify serious environmental degradation issues, or if environmental impacts not anticipated in the ESIA and this decision are observed, additional environmental terms shall be imposed or the terms of this decision shall be modified, as provided in paragraph 9 of Article 2 of Law 4014/2011, as in force, in conjunction with Article 6 of the same law.

### 13.8 Other provisions

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This decision:

1. Does not cover safety issues, which continue to be regulated by the existing relevant provisions, including those of Law 4409/2016 (A' 136).
2. Does not exempt the project proponent from the obligation to obtain any other permits, approvals, or regulatory acts required by the applicable legislation for the project.

### 13.9 Obligations regarding the monitoring of compliance with environmental terms

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1. This decision and the accompanying Environmental Impact Assessment (EIA), as well as any future files regarding renewals, amendments, or technical environmental studies along with the relevant decisions, must be available on the project site. These documents must be presented by the responsible project operator to any competent authority or inspection body, in accordance with the applicable legislation.

The project operator, both during the implementation phase and during the decommissioning phase, must:

- 1.1. Maintain records that demonstrate compliance with the environmental terms of the project (e.g., contracts, supporting documents, invoices, data registries, electronic files, etc.).
- 1.2. Allow access to the project site for any competent inspection authority and facilitate the conduct of inspections.
- 1.3. Provide all required documents and information.
- 1.4. Facilitate inspections and comply with the recommendations or instructions of the competent authorities responsible for enforcing environmental legislation.
- 1.5. If issues arise during the implementation of this decision that are not covered by its terms, their resolution shall be carried out in accordance with the applicable legislation, and where this is not possible, based on the approved project studies or any future files related to the project's environmental permitting.

2. In the event of pollution or any other environmental degradation, or a violation of the terms of this decision, the project operators shall be subject to the penalties provided for in Articles 28, 29, and 30 of Law 1650/1986, as amended and currently in force.

## 14 Photographic documentation

| AA | Photo credits          | Theme                                                                                                  |
|----|------------------------|--------------------------------------------------------------------------------------------------------|
| 1  | Efstratios Bourdakis   | M/V ECO ONE deployed 26/3-1/4/2026 & 6-23/4/2026                                                       |
| 2  | Efstratios Bourdakis   | Onboard coordination                                                                                   |
| 3  | Ioanna Koutsomichou    | Challenging working conditions                                                                         |
| 4  | Efstratios Bourdakis   | Working 24/7 in shifts weather depending                                                               |
| 5  | Efstratios Bourdakis   | Control bridge                                                                                         |
| 6  | Efstratios Bourdakis   | Control bridge                                                                                         |
| 7  | Efstratios Bourdakis   | Nautical chart of the Adriatic Sea                                                                     |
| 8  | Efstratios Bourdakis   | Marine radar                                                                                           |
| 9  | Kalliopi Gkikopoulou   | Waterspout at sea                                                                                      |
| 10 | Efstratios Bourdakis   | Rotating windshield wiper during rainstorm                                                             |
| 11 | Efstratios Bourdakis   | General cargo ship                                                                                     |
| 12 | Efstratios Bourdakis   | Container ship                                                                                         |
| 13 | Efstratios Bourdakis   | General cargo ship                                                                                     |
| 14 | Efstratios Bourdakis   | Ro-Ro Cargo                                                                                            |
| 15 | Efstratios Bourdakis   | Crude oil tanker                                                                                       |
| 16 | Efstratios Bourdakis   | Warship                                                                                                |
| 17 | Pietro Leanza          | Aircraft carrier                                                                                       |
| 18 | Efstratios Bourdakis   | Fishing vessel                                                                                         |
| 19 | Efstratios Bourdakis   | Fishing vessel                                                                                         |
| 20 | Efstratios Bourdakis   | Sediment sampling with stainless-steel ETS_85A Van Veen grab                                           |
| 21 | Efstratios Bourdakis   | Sediment sampling                                                                                      |
| 22 | Efstratios Bourdakis   | Sediment sampling                                                                                      |
| 23 | Efstratios Bourdakis   | Sediment sampling                                                                                      |
| 24 | Efstratios Bourdakis   | Water quality sampling with General Oceanics Model 1018 (MWS12) Rosette multisampler                   |
| 25 | Efstratios Bourdakis   | Water quality sampling                                                                                 |
| 26 | Efstratios Bourdakis   | Water quality sampling                                                                                 |
| 27 | Efstratios Bourdakis   | Seawater sampling for marine fauna eDNA extraction                                                     |
| 28 | Efstratios Bourdakis   | Seawater sampling                                                                                      |
| 29 | Ioanna Koutsomichou    | Installing hydrophone for Passive Acoustic Monitoring (PAM)                                            |
| 30 | Ioanna Koutsomichou    | Installing hydrophone for Passive Acoustic Monitoring (PAM)                                            |
| 31 | Efstratios Bourdakis   | PAM HQ for realtime acoustic detection and data acquisition                                            |
| 32 | Jakob Fric             | Marine mammal & sea turtle monitoring with reticle binoculars                                          |
| 33 | Ioanna Koutsomichou    | Avifauna monitoring                                                                                    |
| 34 | Efstratios Bourdakis   | Bird migration photo documentation                                                                     |
| 35 | Aleksandra Pierozynska | Sperm Whale ( <i>Physeter macrocephalus</i> ) sighting from 28.03.2026                                 |
| 36 | Aleksandra Pierozynska | Sperm Whale ( <i>Physeter macrocephalus</i> ) sighting from 28.03.2026                                 |
| 37 | Aleksandra Pierozynska | Risso's Dolphin ( <i>Grampus griseus</i> ) sighting from 27.03.2026                                    |
| 38 | Aleksandra Pierozynska | Risso's Dolphin ( <i>Grampus griseus</i> ) sighting from 27.03.2026                                    |
| 39 | Aleksandra Pierozynska | Striped Dolphin ( <i>Stenella coeruleoalba</i> ) sighting from 18.04.2026                              |
| 40 | Aleksandra Pierozynska | Striped Dolphin ( <i>Stenella coeruleoalba</i> ) sighting from 18.04.2026                              |
| 41 |                        | Loggerhead Sea Turtle ( <i>Caretta caretta</i> ) sighting from 12.04.2026                              |
| 42 | Aleksandra Pierozynska | Scopoli's Shearwater ( <i>Calonectris diomedea</i> )                                                   |
| 43 | Efstratios Bourdakis   | Scopoli's Shearwater ( <i>Calonectris diomedea</i> )                                                   |
| 44 | Efstratios Bourdakis   | Yelkouan Shearwaters ( <i>Puffinus yelkouan</i> ) off Gallipoli                                        |
| 45 | Efstratios Bourdakis   | Audouin's Gull ( <i>Ichthyaeetus audouinii</i> , formerly <i>Larus audouinii</i> )                     |
| 46 | Efstratios Bourdakis   | Audouin's Gulls ( <i>Ichthyaeetus audouinii</i> , formerly <i>Larus audouinii</i> )                    |
| 47 | Aleksandra Pierozynska | Yellow-legged Gull ( <i>Larus michahellis</i> ) adult                                                  |
| 48 | Efstratios Bourdakis   | Yellow-legged Gull ( <i>Larus michahellis</i> ) immature                                               |
| 49 | Aleksandra Pierozynska | Mediterranean Gull ( <i>Ichthyaeetus melanocephalus</i> , formerly <i>Larus melanocephalus</i> ) adult |
| 50 | Aleksandra Pierozynska | Mediterranean Gull ( <i>Ichthyaeetus melanocephalus</i> , formerly <i>Larus melanocephalus</i> ) 2cy   |
| 51 | Efstratios Bourdakis   | Lesser Black-backed Gull ( <i>Larus fuscus</i> )                                                       |

| AA | Photo credits          | Theme                                                                                                       |
|----|------------------------|-------------------------------------------------------------------------------------------------------------|
| 52 | Efstratios Bourdakis   | Lesser Blacked-backed Gull ( <i>Larus fuscus</i> ) and Scopoli's Shearwater ( <i>Calonectris diomedea</i> ) |
| 53 | Efstratios Bourdakis   | Little gull ( <i>Hydrocoloeus minutus</i> , formerly <i>Larus minutus</i> )                                 |
| 54 | Aleksandra Pierozynska | Caspian Tern ( <i>Hydroprogne caspia</i> , formerly <i>Sterna caspia</i> )                                  |
| 55 | Pietro Leanza          | Eurasian Moorhen ( <i>Gallinula chloropus</i> )                                                             |
| 56 | Efstratios Bourdakis   | Garganey ( <i>Spatula querquedula</i> , formerly <i>Anas querquedula</i> )                                  |
| 57 | Efstratios Bourdakis   | Great Cormorant ( <i>Phalacrocorax carbo</i> )                                                              |
| 58 | Aleksandra Pierozynska | Black-crowned Night Heron ( <i>Nycticorax nycticorax</i> )                                                  |
| 59 | Efstratios Bourdakis   | Western Cattle-Egret ( <i>Ardea ibis</i> , formerly <i>Bubulcus ibis</i> )                                  |
| 60 | Pietro Leanza          | Great Egret ( <i>Ardea alba</i> , formerly <i>Casmerodius albus</i> or <i>Egretta alba</i> )                |
| 61 | Aleksandra Pierozynska | Gray Heron ( <i>Ardea cinerea</i> )                                                                         |
| 62 | Aleksandra Pierozynska | Squacco Heron ( <i>Ardeola ralloides</i> )                                                                  |
| 63 | Efstratios Bourdakis   | Western Marsh Harrier ( <i>Circus aeruginosus</i> )                                                         |
| 64 | Aleksandra Pierozynska | Eurasian Kestrel ( <i>Falco tinnunculus</i> )                                                               |
| 65 | Aleksandra Pierozynska | Lesser Kestrel ( <i>Falco naumanni</i> )                                                                    |
| 66 | Aleksandra Pierozynska | Feral pigeon ( <i>Columba livia domestica</i> )                                                             |
| 67 | Aleksandra Pierozynska | European Turtle-Dove ( <i>Streptopelia turtur</i> )                                                         |
| 68 | Aleksandra Pierozynska | Common Hoopoe ( <i>Upupa epops</i> )                                                                        |
| 69 | Aleksandra Pierozynska | European bee-eater ( <i>Merops apiaster</i> )                                                               |
| 70 | Aleksandra Pierozynska | Blue-cheeked Bee-eater ( <i>Merops persicus</i> )                                                           |
| 71 | Aleksandra Pierozynska | Barn Swallow ( <i>Hirundo rustica</i> )                                                                     |
| 72 | Aleksandra Pierozynska | European Red-rumped Swallow ( <i>Cecropis rufula</i> , formerly <i>Hirundo daurica</i> )                    |
| 73 | Aleksandra Pierozynska | Tree Pipit ( <i>Anthus trivialis</i> )                                                                      |
| 74 |                        | Red-throated Pipit ( <i>Anthus cervinus</i> )                                                               |
| 75 | Aleksandra Pierozynska | Western Yellow Wagtail ( <i>Motacilla flava</i> )                                                           |
| 76 | Aleksandra Pierozynska | Western Yellow Wagtail ( <i>Motacilla flava</i> )                                                           |
| 77 | Ioanna Koutsomichou    | European robin ( <i>Erithacus rubecula</i> )                                                                |
| 78 | Pietro Leanza          | Common Redstart ( <i>Phoenicurus phoenicurus</i> )                                                          |
| 79 | Pietro Leanza          | Black Redstart ( <i>Phoenicurus ochruros</i> )                                                              |
| 80 | Aleksandra Pierozynska | Whinchat ( <i>Saxicola rubetra</i> )                                                                        |
| 81 | Jakob Fric             | Blue Rock-Thrush ( <i>Monticola solitarius</i> )                                                            |
| 82 | Efstratios Bourdakis   | Eastern Subalpine Warbler ( <i>Curruca cantillans</i> , formerly <i>Sylvia cantillans</i> )                 |
| 83 | Aleksandra Pierozynska | Common Chiffchaff ( <i>Phylloscopus collybita</i> )                                                         |
| 84 | Aleksandra Pierozynska | Willow Warbler ( <i>Phylloscopus trochilus</i> )                                                            |
| 85 | Efstratios Bourdakis   | Hawfinch ( <i>Coccothraustes coccothraustes</i> ) found dead onboard                                        |
| 86 | Efstratios Bourdakis   | Painted Lady ( <i>Vanessa cardui</i> )                                                                      |
| 87 | Kalliopi Gkikopoulou   | Plastic piece                                                                                               |
| 88 | Efstratios Bourdakis   | Plastic bottle                                                                                              |





Figure 14-1: M/V ECO ONE



Figure 14-2: Onboard coordination



Figure 14-3: Challenging working conditions

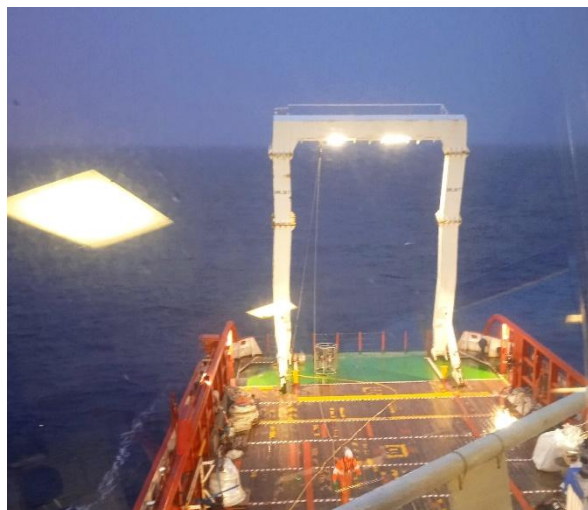


Figure 14-4: Working 24/7 in shifts weather depending

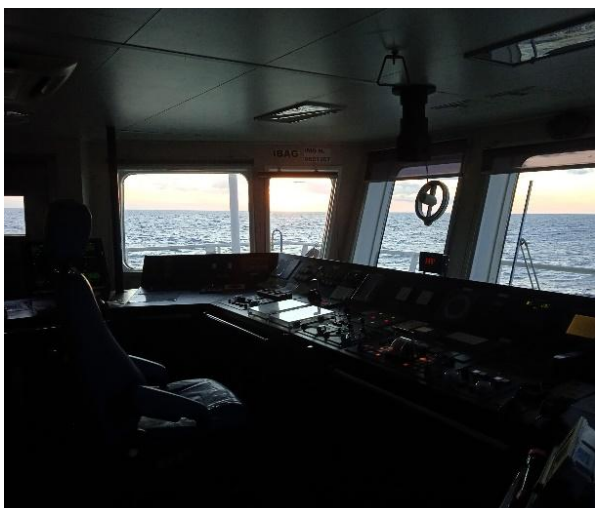


Figure 14-5: Control bridge

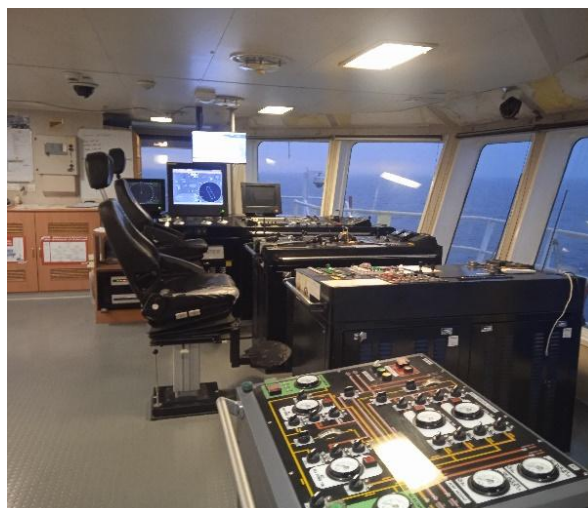


Figure 14-6: Control bridge



Figure 14-7: Nautical chart of the Adriatic Sea



Figure 14-8: Marine radar



Figure 14-9: Waterspout at sea



Figure 14-10: Rotating windshield wiper during rainstorm





Figure 14-11: General cargo ship



Figure 14-12: Container ship



Figure 14-13: General cargo ship



Figure 14-14: Ro-Ro Cargo



Figure 14-15: Crude oil tanker





Figure 14-16: Warship



Figure 14-17: Aircraft carrier



Figure 14-18: Fishing vessel



Figure 14-19: Fishing vessel



Figure 14-20: Sediment sampling with stainless-steel ETS\_85A Van Veen grab



Figure 14-21: Sediment sampling



Figure 14-22: Sediment sampling



Figure 14-23: Sediment sampling



Figure 14-24: Water quality sampling with General Oceanics Model 1018 (MWS12) Rosette multisampler



Figure 14-25: Water quality sampling





Figure 14-26: Water quality sampling



Figure 14-27: Seawater sampling for marine fauna eDNA extraction



Figure 14-28: Seawater sampling



Figure 14-29: Installing hydrophone for Passive Acoustic Monitoring (PAM)



Figure 14-30: Installing hydrophone for PAM



Figure 14-31: PAM HQ for realtime acoustic detection and data acquisition



Figure 14-32: Marine mammal & sea turtle monitoring with reticle binoculars



Figure 14-33: Avifauna monitoring





Figure 14-34: Bird migration photo documentation



Figure 14-35: Sperm Whale (*Physeter macrocephalus*) sighting from 28.03.2026





Figure 14-36: Sperm Whale (*Physeter macrocephalus*) sighting from 28.03.2026



Figure 14-37: Risso's Dolphin (*Grampus griseus*) sighting from 27.03.2026





Figure 14-38: Risso's Dolphin (*Grampus griseus*) sighting from 27.03.2026



Figure 14-39: Striped Dolphin (*Stenella coeruleoalba*) sighting from 18.04.2026





Figure 14-40: Striped Dolphin (*Stenella coeruleoalba*) sighting from 18.04.2026



Figure 14-41: Loggerhead Sea Turtle (*Caretta caretta*) sighting from 12.04.2026



Figure 14-42: Scopoli's Shearwater (*Calonectris diomedea*)



Figure 14-43: Scopoli's Shearwater (*Calonectris diomedea*)



Figure 14-44: Yelkouan Shearwaters (*Puffinus yelkouan*) off Gallipoli



Figure 14-45: Audouin's Gull (*Ichthyaelus audouinii*, formerly *Larus audouinii*)



Figure 14-46: Audouin's Gulls (*Ichthyaelus audouinii*, formerly *Larus audouinii*)





Figure 14-47: Yellow-legged Gull (*Larus michahellis*) adult



Figure 14-48: Yellow-legged Gull (*Larus michahellis*) immature



Figure 14-49: Mediterranean Gull (*Ichthyaeetus melanocephalus*, formerly *Larus melanocephalus*) adult



Figure 14-50: Mediterranean Gull (*Ichthyaeetus melanocephalus*, formerly *Larus melanocephalus*) 2cy



Figure 14-51: Lesser Black-backed Gull (*Larus fuscus*)



Figure 14-52: Lesser Black-backed Gull (*Larus fuscus*) and Scopoli's Shearwater (*Calonectris diomedea*)



Figure 14-53: Little gull (*Hydrocoloeus minutus*, formerly *Larus minutus*)



Figure 14-54: Caspian Tern (*Hydroprogne caspia*, formerly *Sterna caspia*)



Figure 14-55: Eurasian Moorhen (*Gallinula chloropus*)



Figure 14-56: Garganey (*Spatula querquedula*, formerly *Anas querquedula*)



Figure 14-57: Great Cormorant (*Phalacrocorax carbo*)



Figure 14-58: Black-crowned Night Heron (*Nycticorax nycticorax*)





Figure 14-59: Western Cattle-Egret (*Ardea ibis*, formerly *Bubulcus ibis*)



Figure 14-60: Great Egret (*Ardea alba*, formerly *Casmerodius albus* or *Egretta alba*)



Figure 14-61: Gray Heron (*Ardea cinerea*)



Figure 14-62: Squacco Heron (*Ardeola ralloides*)



Figure 14-63: Western Marsh Harrier (*Circus aeruginosus*)



Figure 14-64: Eurasian Kestrel (*Falco tinnunculus*)





Figure 14-65: Lesser Kestrel (*Falco naumanni*)



Figure 14-66: Feral pigeon (*Columba livia domestica*)



Figure 14-67: European Turtle-Dove (*Streptopelia turtur*)

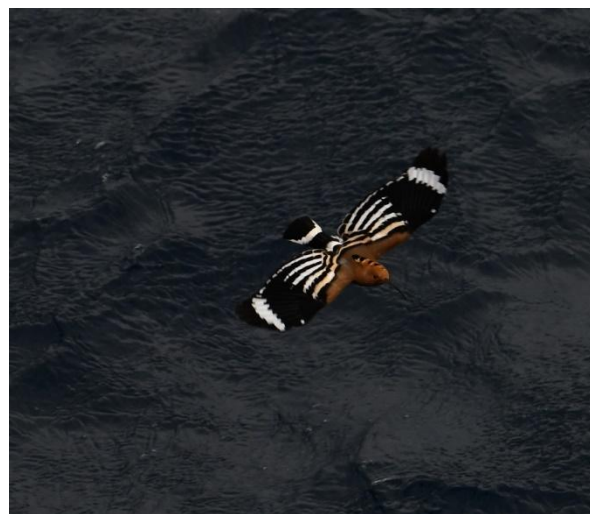


Figure 14-68: Common Hoopoe (*Upupa epops*)



Figure 14-69: European bee-eater (*Merops apiaster*)



Figure 14-70: Blue-cheeked Bee-eater (*Merops persicus*)



Figure 14-71: Barn Swallow (*Hirundo rustica*)



Figure 14-72: European Red-rumped Swallow (*Cecropis rufula*, formerly *Hirundo daurica*)



Figure 14-73: Tree Pipit (*Anthus trivialis*)



Figure 14-74: Red-throated Pipit (*Anthus cervinus*)



Figure 14-75: Western Yellow Wagtail (*Motacilla flava*)



Figure 14-76: Western Yellow Wagtail (*Motacilla flava*)





Figure 14-77: European robin (*Erithacus rubecula*)



Figure 14-78: Common Redstart (*Phoenicurus phoenicurus*)



Figure 14-79: Black Redstart (*Phoenicurus ochruros*)



Figure 14-80: Whinchat (*Saxicola rubetra*)



Figure 14-81: Blue Rock-Thrush (*Monticola solitarius*)



Figure 14-82: Eastern Subalpine Warbler (*Curruca cantillans*, formerly *Sylvia cantillans*)



Figure 14-83: Common Chiffchaff (*Phylloscopus collybita*)



Figure 14-84: Willow Warbler (*Phylloscopus trochilus*)



Figure 14-85: Hawfinch (*Coccothraustes coccothraustes*) found dead onboard

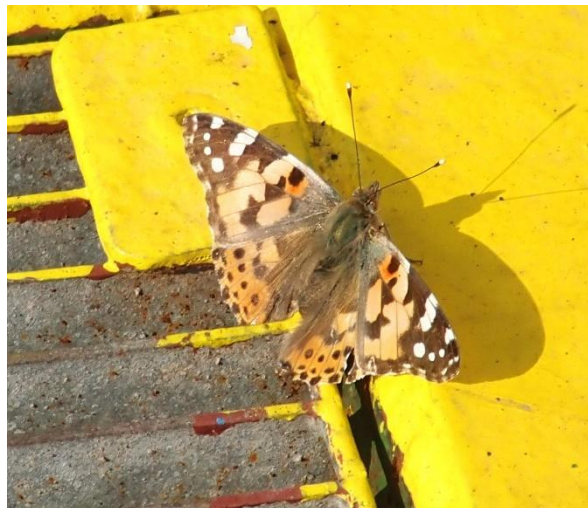


Figure 14-86: Painted Lady (*Vanessa cardui*)



Figure 14-87: Plastic piece



Figure 14-88: Plastic bottle

## 15 Maps

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