

ENVIRONMENTAL & SOCIAL IMPACT ASSESSMENT (ESIA) FOR PRINOS OFFSHORE DEVELOPMENT PROJECT



Chapter 5 Project Compatibility

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ABBREVIATIONS

ACCOBAMS	Agreement on the Conservation of Cetaceans in the Black Sea, Mediterranean Sea and contiguous Atlantic
ALARP	As Low As Reasonable Practicable
CBD	Convention on Biological Diversity
CLC	Civil Liability Convention
CMS	Convention on Migratory Species
DESFA	Hellenic Gas Transmission System Operator
DIPA	Directorate of Environmental Permitting
EBRD	European Bank for Reconstruction and Development
EC	European Commission
EEC	European Economic Community
EHS	Environment Health and Safety
EIA	Environmental Impact Assessment
ELD	Environmental Liability Directive
ENERGEAN	Energean Oil & Gas S.A.
EPER	European Pollutant Emission Register
ESIA	Environmental & Social Impact Assessment
ESMMP	Environmental and Social Management and Monitoring Plan
ESMS	Environmental and Social Management System
EU	European Union
EUOAG	European Union Offshore Oil & Gas Authorities Group
GES	Good Environmental Status
GG	Government Gazette
GIIP	Good International Industry Practice
GOP	Good Oilfield Practices
HNS	Hazardous and Noxious Substances
HR	Hellenic Republic
HS	Health and Safety

HSE	Health, Safety and Environment
ICZM	Integrated Coastal Zone Management
IFC	International Finance Corporation
IFI	International Financial Institution
IGB	Interconnector Greece – Bulgaria
ILO	International Labour Organization
IMDG	International Maritime Dangerous Goods Code
IMO	International Maritime Organization
IPPC	Industrial Pollution Prevention Control
JMD	Joint Ministerial Decision
LBS	Land Based Sources
MAP	Mediterranean Action Plan
MARPOL	Marine Pollution
MD	Ministerial Decision
MS	Member States
MSFD	Marine Strategy Framework Directive
OPRC	Oil Pollution Preparedness Response & Cooperation
OPRC	Oil Pollution Preparedness Response & Cooperation
PD	Presidential Decree
PEIA	Preliminary Environmental Impact Assessment
PIER	Procedure for Preliminary Identification of Environmental Requirements
POP	Persistent Organic Pollutant
PR	Performance Requirements
PRTR	Pollution Release and Transfer Register
QRA	Quantitative Risk Assessment
REACH	Registration, Evaluation, Authorization and Restriction of Chemicals
RoMH	Report on Major Hazards
SEP	Stakeholder Engagement Plan

SPA	Special Protection Area
TAP	Trans Adriatic Pipeline
UNCLOS	United Nations Convention on the Law of the Sea
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environmental Programme
WFD	Waste Framework Directive
WFD	Water Framework Directive
YPEN	Ministry of Environment and Energy

5 PROJECT COMPATIBILITY WITH THE ESTABLISHED INSTITUTIONAL PROVISIONS OF THE AREA

5.1 CONCESSION AGREEMENT

The project is governed under a concession agreement with the operator (currently Energean) that has been initially signed with the Greek State and then ratified accordingly. Following this initial agreement a number of amendments has been made, that are presented in the table below.

Table 5-1: Legal acts governing the concession agreement

Legal act	Reference number	Subject
Law 98/1975	GG 161/1.8.1975	Ratification of the concession agreement of 14th June 1975, between the Greek State and Oceanic Exploration Co of Greece, Hellenic Oil Company Inc, Wintershall Aktiengesellschaft, White Shield Greece Oil Corporation, for exploration and exploitation of hydrocarbons in the marine area of Thracian Sea.
Law 539/1977	GG 39/11.2.1977	Ratification of the concession agreement of 27th September 1977 between the Greek State and Denison Mines Limited, Hellenic Oil Company Inc, Wintershall Aktiengesellschaft, White Shield Greece Oil Corporation.
Law 1769/1988	GG 66/7.4.1988	Ratification of the amended concession agreement of 9th December 1987 between the Greek State and Denison Mines Limited, Hellenic Oil Company Inc, White Shield Greece Oil Corporation, Wintershall Hellas S.A. Oil and Public Corporation for Oil – Exploration and Exploitation of Hydrocarbons S.A. and the annexes 1, 2, 3 and 4 and adjustments about hydrocarbon issues.
Law 2159/1993	GG 116/9.7.1993	Ratification of the second amended

Legal act	Reference number	Subject
		concession agreement of 23rd February 1993 between the Greek State and Denison Mines Limited, Hellenic Overseas (Holdings) Ltd, White Shield Greece Oil Corporation, Wintershall Aktiengesellschaft, Wintershall Hellas S.A. Oil and Public Corporation for Oil – Exploration and Exploitation of Hydrocarbons S.A. and annex 1.
Law 2779/1999	GG 296/30.12.1999	Ratification of: a) The 16.11.1999 agreement between the Greek State and the awarded consortium f L.98/1975 as in power today; b) The 23.11.1999 agreement between the Greek State and Kavala Oil S.A. and the annexes I and II.
Law 4135/2013	GG 69/19.3.2013	Ratification of the first amendment of the concession agreement of 31.10.2012 between the Greek State and the awarded companies Kavala Oil S.A. and Energean Oil & Gas S.A. and annexes I and II.
Law 4296/2013	GG 214/2.10.2014	Ratification of the concession agreement of 30.12.2013 between the Greek State and the companies Kavala Oil S.A. and Energean Oil & Gas S.A. as well as the 3 rd contractual party company Hellenic Petroleum S.A. which amends the 23.11.1999 agreement for the exploitation of the offshore area of Thracian Sea between the Greek State and Kavala Oil S.A., which was ratified with L.2779/1999 (A'296).

5.2 LEGISLATIVE FRAMEWORK

5.2.1 Main legislative framework for the environment

5.2.1.1 Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment (EIA Directive)

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 up 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.

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 CO₂ transport and storage projects). This was eventually codified by Directive 2011/92/EU of 13 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 new 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 do 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, it 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. The EIA Directive applies to a wide range of public and private projects, which are defined in Annexes I and II. Projects included in Annex I are considered as having significant effects on the environment and require an EIA. For projects listed in Annex II the national authorities have to decide whether an EIA is needed through a screening procedure.

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).

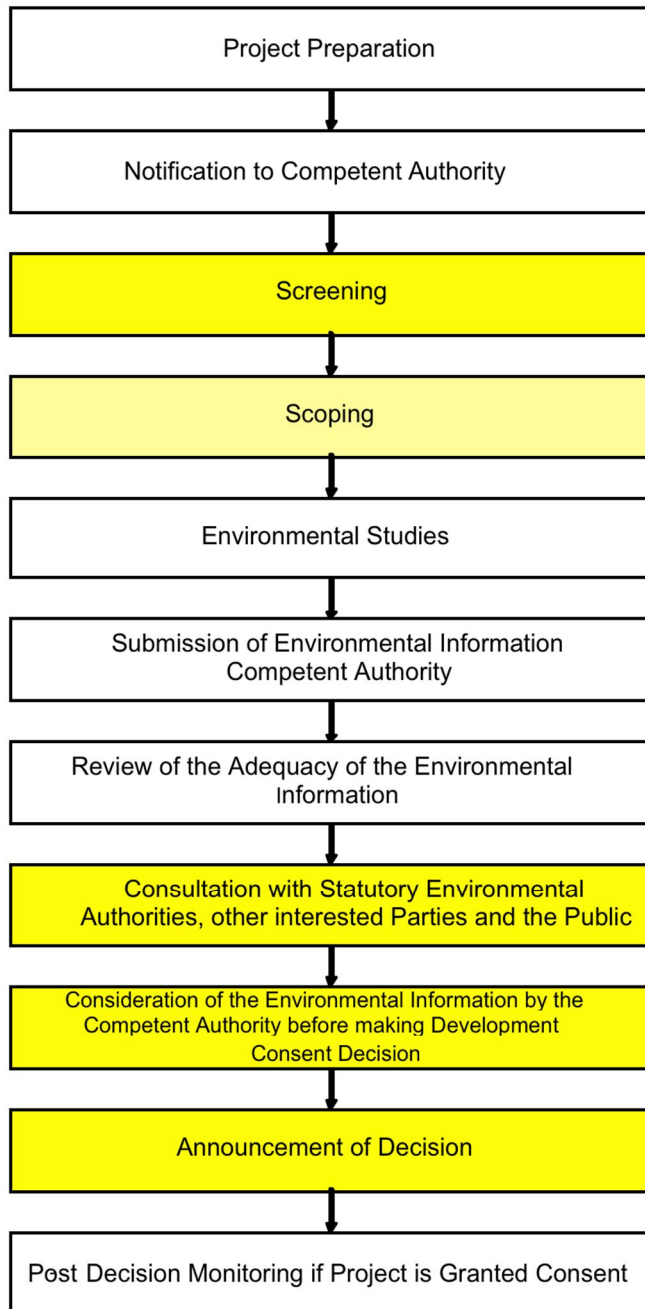


Figure 5-1: Flow chart of EIA process as per EU Directive

Concerning oil and gas extraction, the EIA Directive provides that the conduct of an EIA is mandatory for the 'extraction of petroleum and natural gas for commercial purposes where the amount extracted exceeds 500 tn/d in the case of petroleum and 500,000 m³/d in the case of gas' (Annex I (14) EIA Directive) and 'pipelines with a diameter of more than 800mm and a length of more than 40km for the transport of gas and oil' (Annex I (16)). In addition, Annex I makes EIA mandatory for 'any change to or extension of projects listed in this Annex where such a change or extension in itself meets the thresholds, if any, set out in this Annex' (Annex I (24)). It is subject to discussion whether all oil and gas activities below the threshold are covered by

Annex II (2)(d) which would mean that, in accordance with Article 4, the Member State determines whether the activity is subject to EIA (screening).

The offshore oil and gas sector has to comply with the provisions of the EIA Directive when the amounts of oil and gas extracted exceed those specified in Annex I of the EIA Directive. The proposed Project in its current production rates (3,000 bbls/d equivalent to about 355 MT), does not trigger Annex I of the Directive. However due to the increase in production from the new investment programme as well as its design capacities, which both exceed the aforementioned thresholds, the Project is required to undergo an ESIA as per Annex I of the Directive including disclosure thereof and approval by the relevant environmental authorities. The Offshore Directive also incorporates operators' obligation to consider environmental impacts: it explicitly states that one of the conditions for operating offshore installations is the submission of a Major Hazard Report which shall contain, amongst others, 'a description of the aspects of the environment likely to be significantly affected, an assessment of the identified potential environmental effects, in particular releases of pollutants to the environment, and a description of the technical and non- technical measures envisaged to prevent, reduce or offset them, including monitoring'.

5.2.1.2 National legislation, based on L1650/1985

Greek legislative framework was enriched with the first attempt to protect the environment in 1986. L.1650/1986 was approximating the first EIA Directive by also regulating a number of environmental matters, which were quite radical for the time. The approximation was quite detailed and the matters that were allowed to the country member states certain degree of flexibility, the above law was leaning to the stricter rendering.

The Directive amendments led to the national legislation amendments introduced by L.3010/2002. Main changes introduced included the compliance with new Directive, decentralization and the introduction of the screening process.

More recently the legal framework was reformed through L.4014/2011. This was accompanied by a number of JMDs, MDs and Circulars aiming together with the main law to improve the overall output and increase the added value of the procedures.

The overall impact assessment – permitting framework in the Greek legislation is governed by the following (including ratifications of the aforementioned conventions as applicable) and is presented in paragraph 5.2.4.

The procedure for the Environmental Impact Assessment in Greece, for projects like the proposed one, can be summarised in the following phases (according to the existing legislation):

- Environmental Impact (and Social) Assessment: the applicant shall provide an E(S)IA of the project to the Ministry of Environment and Energy (YPEN), Directorate of Environmental Permitting (DIPA)¹;

¹ The content of the E(S)IA is prescribed by (a) the project classification (as per MD 1958/2012) and (b) the analytical specifications as set out in the JMD 170225/2014 for each type of project / activity.

- Check for Completeness: DIPA/YPEN will check the E(S)IA for completeness and may request additional information, prior to distributing for consultation;
- Statutory Consultation: opinion/response from the Central Authorities or other co-competent Ministries, Regional Authorities and various organizations²;
- Public Consultation: the project is presented to the Regional Council during an open hearing where people can express their views
- Decision on Approval of Environmental Conditions: DIPA/YPEN will consider the results of the consultation (statutory and public) and will issue its decision, co-signed by other competent Ministries
- Publication of Decision: publication of the decision through the relative Regional Council.

The main changes that have been introduced from 2011 up to date can be summarized below:

- Preliminary EIA (PEIA) is no longer foreseen to be in the Environmental Permitting Process.
- Instead of the PEIA the new framework introduces the optional Procedure for Preliminary Identification of Environmental Requirements (PIER) – however only if the project proponent requests it. In European and international EIA practice terms, this new optional step could be classified as “Scoping”.
- ESIA's will be evaluated by a new body of Independent Auditors (this has not been applied up to date).
- New procedures for Stakeholder involvement and participation of the Public, prescribed by JMD 1649/45/2014. In this context, all environmental information of the Project will be uploaded to the internet (this has not been applied up to date).
- New procedures for Renewal and Modifications of the Approval of Environmental Terms are defined.
- In case of modifications in the Technical Design of the Project after the issue of the Approval of Environmental Terms, the Owner has to submit a Dossier of Final Design Compliance and in some cases a Technical Environmental Study.
- Appropriate Assessment is mandatory for Natura Area Crossing, as part of ESIA through Special Ecological Study (analytical specifications are provided in JMD 170225/2014).
- Wastewater Treatment and Disposal Permit and Hazardous and Non-Hazardous Waste Management Permits will be part of the Approval of Environmental Terms and relevant Studies as part of the ESIA.

In particular, JMD 1649/45/2014, which sets out and specifies the foreseen in article 19, paragraph 19 of L.4014/2011 provisions for:

- The consultation means between the different authorities and
- The ways of informing the public as well as its 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,

² The consultees are predefined by the JMD 1649/45/2014 for each project type and category.

since a transition period 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.

Overall the procedure is in line with the consultation and dissemination guidelines of the Directive. However, the EBRD standards (PR10) go beyond in terms of the consultation provisions mentioned above in the following ways:

- EBRD's PR 10 requires the stakeholder consultation to take place at the early phases of ESIA development and in particular during scoping, a stage which is not mandatory as per the Greek legislative framework.
- PR 10 requires disclosure of the ESIA to ensure meaningful consultation and disclosure of project information and to allow stakeholders to provide inputs and raise concerns. Consultation and information disclosure should not cease at ESIA disclosure but continue for the life of the Project. Similarly stakeholders should be able to engage with the Project during the life of the project.
- PR10 also requires analytical stakeholder mapping through the stakeholder engagement plan (SEP), which should include a number of interested and affected parties, including the public and vulnerable groups, and not just authorities.
- L.4014/2011 and JMD 1649/45/2014, define the consultation and dissemination procedures to be initiated following the ESIA submission to the Competent Authority, which regulates the whole process instead of the project owner being responsible to do so. PR 10 requires the Project owner to take a lead role in ensuring adequate stakeholder engagement and information disclosure takes place.
- The public has the ability to comment on the ESIA document only during the public hearing that is set out by the regional authority. The EBRD's public information policy requires the ESIA to be disclosed for a minimum of 60 days before the project can be presented to the EBRD's Board of Directors for an investment decision. The ESIA should remain in the public domain for the life of the Project (e.g. online),

The overall procedure of the ESIA permitting as per the Greek legislative framework currently in power is further outlined in the figure below.

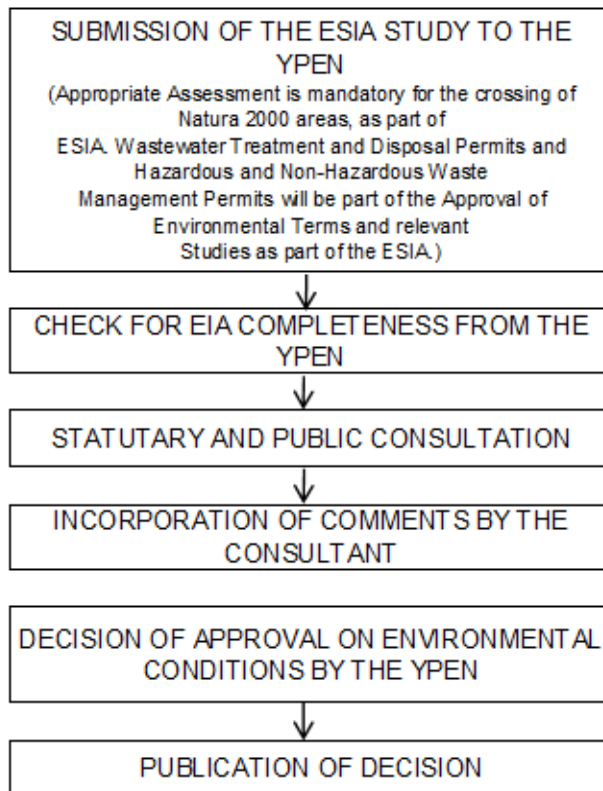


Figure 5-2: Flow chart of EIA process as per National legislative framework

In the case of a requirement to amend an already approved environmental permit, the process requires a new ESIA, in case the project interventions are considered significant and therefore are likely to have a significant effect to the environment.

5.2.1.3 *Water framework directive (WFD), 2000/60/EU*

The Water Framework Directive (Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy) is a EU Directive, which commits member states to achieve good qualitative and quantitative status of all water bodies (**including marine waters up to one nautical mile from shore**) by 2015. It is a framework in the sense that it prescribes steps to reach the common goal rather than adopting the more traditional limit value approach.

The Directive aims for 'good status' for all ground and surface waters (rivers, lakes, transitional waters, and coastal waters) in the EU.

The ecological and chemical statuses of surface waters are assessed according to the following criteria:

- Biological quality (fish, benthic invertebrates, aquatic flora)
- Hydromorphological quality such as river bank structure, river continuity or substrate of the river bed
- Physical-chemical quality such as temperature, oxygenation and nutrient conditions

- Chemical quality that refers to environmental quality standards for river basin specific pollutants. These standards specify maximum concentrations for specific water pollutants. If even one such concentration is exceeded, the water body will not be classed as having a “good ecological status”.

The Water Framework Directive stipulates that groundwater must achieve “good quantitative status” and “good chemical status” (i.e. not polluted) by 2015. Groundwater bodies are classified as either “good” or “poor”.

Due to distance of the offshore facilities from the shore, the majority of the complex (existing – new facilities) does not fall within the provisions of the WFD. The only ones that do fall are the pipelines reaching on shore.

5.2.1.4 Marine strategy framework directive (MSFD), 2008/56/EC

The Marine Directive (Directive 2008/56/EC) was adopted on 17 June 2008, after several years of preparation and extensive consultation of all the relevant actors and the public, and came into force on 15 June 2008.

The Marine Directive aims to achieve Good Environmental Status (GES) of the EU's marine waters by 2020 and to protect the resource base upon which marine-related economic and social activities depend. It is the first EU legislative instrument related to the protection of marine biodiversity, as it contains the explicit regulatory objective that “biodiversity is maintained by 2020”, as the cornerstone for achieving GES.

The Directive enshrines in a legislative framework the ecosystem approach to the management of human activities having an impact on the marine environment, integrating the concepts of environmental protection and sustainable use.

In order to achieve its goal, the Directive establishes European marine regions and sub-regions on the basis of geographical and environmental criteria. The Directive lists four European marine regions – the Baltic Sea, the North-east Atlantic Ocean, the Mediterranean Sea and the Black Sea – located within the geographical boundaries of the existing regional sea conventions. Cooperation between the Member States of one marine region and with neighbouring countries, which share the same marine waters, is already taking place through these Regional Sea Conventions.

5.2.1.5 Directive 2008/98/EC on waste and repealing certain Directives (Waste Framework Directive)

The Waste Framework Directive provides the overarching 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 ‘treatment of waste’ is defined as ‘recovery or disposal operations, including preparation prior to recovery or disposal. According to the Waste Framework Directive, a distinction should be made between:

- The preliminary storage of waste pending its collection;
- The collection of waste; and
- The storage of waste pending treatment.

Moreover, 'establishments or undertakings that produce waste in the course of their activities should not be regarded as engaged in waste management and subject to authorisation for the storage of their waste pending its collection'. This implies that offshore installations only need to obtain a permit if they treat waste (sewage, garbage) themselves.

Further distinction between collection and treatment notes that 'preliminary storage of waste within the definition of collection is understood as a storage activity pending its collection in facilities where waste is unloaded in order to permit its preparation for further transport for recovery or disposal elsewhere. The distinction between preliminary storage of waste pending collection and the storage of waste pending treatment should be made, in view of the objective of this Directive, according to the type of waste, the size and time period of storage and the objective of the collection. The storage of waste prior to recovery for a period of three years or longer and the storage of waste prior to disposal for a period of one year or longer is subject to Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste'.

Note that Article 2(2)(d) of the Waste Framework Directive provides that, to the extent covered by other EU legislation, 'waste resulting from prospecting, extraction, treatment and storage of mineral resources and the working of quarries covered by Directive 2006/21/EC' is excluded from its scope. Nonetheless, according to Article 2(2)(b) of Directive 2006/21/EC on the management of waste from extractive industries (and amending Directive 2004/35/EC) 'waste resulting from the offshore prospecting, extraction and treatment of mineral resources' (italics added) are excluded from its scope. Consequently, since waste produced on offshore installations (and brought onshore) are not covered by the more specific Directive concerning waste from extractive industries, operators of offshore oil and gas installations would have to comply with the requirements of the more general Waste Framework Directive. This would mean that the 'original waste producer or other holder' (in practice: the operator) would be obliged to carry out the treatment of waste himself or have the treatment handled by a dealer or establishment or undertaking which carries out waste treatment operations arranged by a private or public waste collector in accordance with Articles 4 and 13 (Article 15(1)).

5.2.1.6 Council directive 96/82/EC on the control of major-hazards involving dangerous substances (SEVESO II Directive)

The Seveso II Directive requires EU Member States to identify high-risk industrial sites, take appropriate measures to prevent major accidents involving dangerous substances and limit their consequences for man and the environment. However, Article 4(f) stipulates that the Directive does not apply to 'the offshore exploration and exploitation of minerals, including hydrocarbons' and therefore, the analysis does not cover this Directive.

5.2.2 Main legislative framework for the prevention of marine pollution

5.2.2.1 Directive for the safety of offshore oil and gas facilities (2013/30/EC)

Following the Deepwater Horizon incident in the Gulf of Mexico in April 2010, the European Commission (EC) expressed its initial views on the safety of offshore oil and gas operations in its communication 'Facing the challenge of the safety of offshore oil and gas activities' (published on 13 October 2010). The EC communication concluded that the existing divergent and fragmented regulatory framework applying to the safety of offshore oil and gas operations in Europe, along with current industry safety practices did not provide adequate assurance that risks from offshore accidents were minimised throughout the Union.

On the 28th June 2013, the EC published the Offshore Directive. The objective of this Directive is to reduce as far as possible the occurrence of major accidents related to offshore oil and gas operations and to limit their consequences.

Under the 2013/30/EC Directive, the EU has put in place a set of rules to help prevent accidents, as well as respond promptly and efficiently should one occur:

- Before exploration or production begins, companies must prepare a report on major hazard (RoMH) for their offshore installation. This report must contain a risk assessment and an emergency response plan
- Companies must keep resources at hand in order to put them into operation when necessary
- When granting licenses, EU countries must ensure that companies are well financed and have the necessary technical expertise
- Technical solutions, which are critical for the safety of operators' installations, must be independently verified. This must be done prior to the installation going into operation
- National authorities must verify safety provisions, environmental protection measures, and the emergency preparedness of rigs and platforms. If companies do not respect the minimum standards, EU countries can impose sanctions, including halting production
- Information on how companies and EU countries keep installations safe must be made available for citizens
- Companies will be fully liable for environmental damages caused to marine species and natural habitats under protection status. For damage to marine habitats, the geographical zone will cover all EU marine waters including exclusive economic zones and continental shelves.

To further promote offshore safety, the European Commission works with its international partners on the implementation of the highest safety standards worldwide. The offshore inspectors of EU countries also work together through the European Union Offshore Oil and Gas Authorities Group (EUOAG) to share best practices and improve standards.

5.2.2.2 Barcelona convention

In 1975, 16 Mediterranean countries and the European Community adopted the Mediterranean Action Plan (MAP), the first-ever Regional Seas Programme under UNEP's umbrella.

In 1995, the Action Plan for the Protection of the Marine Environment and the Sustainable Development of the Coastal Areas of the Mediterranean (MAP Phase II) was adopted by the Contracting Parties to replace the Mediterranean Action Plan of 1975.

The Convention's main objectives are:

- To assess and control marine pollution;
- To ensure sustainable management of natural marine and coastal resources;
- To integrate the environment in social and economic development;
- To protect the marine environment and coastal zones through prevention and reduction of pollution, and as far as possible, elimination of pollution, whether land or sea-based;
- To protect the natural and cultural heritage;
- To strengthen solidarity among Mediterranean coastal States;
- To contribute to improvement of the quality of life

The Barcelona Convention has given rise to seven Protocols addressing specific aspects of Mediterranean environmental conservation. These are:

- Dumping protocol
- Prevention and Emergency protocol
- Land based sources (LBS) protocol
- SPA and biodiversity protocol
- Offshore protocol
- Hazardous waste protocol
- ICZM protocol

Prevention of and response to environmental damage from offshore exploration and exploitation activities is an issue to which the EU attaches a lot of importance, as demonstrated by a number of policy documents, including the proposal for a regulation for safety of oil and gas offshore activities, currently under discussion in the EU institutions. On 17 December 2012 the Council approved EU accession to the Offshore Protocol, thus underlining EU commitment to reducing environmental impacts of offshore activities in the Mediterranean through efficient regional cooperation. The legal consequence of this is that the Offshore Protocol now becomes part of EU legislation.

5.2.2.3 Comparative analysis between the offshore protocol (Barcelona Convention) and EU Directive on safety of offshore oil and gas facilities (2013/30/EC)

Even at the early stages of the preparation of the Directive 2013/30/EC, it was identified that those two statutory documents would both need to be implemented by offshore facilities within the territorial waters of EU Member States (MS). Therefore it has been deemed necessary that

a comparative analysis between the two is necessary in order to identify possible overlaps, avoid duplications and ultimately make sure that all provisions from both are covered for a given offshore installation (existing or planned).

While their ultimate objectives are often similar, the two legal acts have a different focus: the Offshore Protocol aims at protecting against pollution from offshore activities whereas the EU draft Regulation intends to ensure the safety of offshore activities.

The parallel adoption of these two legal acts provides a unique momentum to further develop and align actions and measures undertaken to implement their core requirements. The Decision of the Parties to the Barcelona Convention at their 17th meeting (February 2012) to endorse the preparation of an Action Plan to effectively implement the Offshore Protocol, covering a 10-year period underlines the need for harmonisation and guidance for effective implementation.

The EU Mediterranean Member States are the ones most impacted by the parallel implementation, as they have to transpose the requirements from both legal acts in their national legislation. One of the objectives of this study was to compare the requirements set by the Offshore Protocol with the requirements of the proposed draft Regulation to examine what the potential additional national measures are that (depending on their national legislation in place) need to be taken by EU Mediterranean countries.

The EU Regulation, having a more specific scope, namely to ensure the safety of offshore activities, sets clear rules for the EU Member States that cover ‘the whole lifecycle of exploration and production activities, from design to the final removal of an oil or gas installation’ In other words, both texts cover the exploration and exploitation activities including removal of installations but the content and level of details vary from one text to another. Consequently, the risk-related obligations that are addressed in the Offshore Protocol are mainly covered by the EU draft Regulation. Examples are the requirements to use best practices or establish contingency plans. The ‘environmental requirements’ set in the Offshore Protocol are to a great extent covered by the applicable EU *acquis*.

The main objective of this section is to discuss the areas where the Protocol requirements are covered by the EU *acquis* but where the requirements set by the EU Regulation or the *acquis* are broader and, consequently, further specifications are necessary to ensure an effective application, or are not covered at all and therefore may require that the EU Mediterranean countries (depending on their national legislation) adopt additional measures. Where possible, the assessment proposes options for a cost-effective fulfilment of the obligations arising from both texts. As mentioned, this depends to a high extent on the national legislation in place in the EU Mediterranean countries.

On the one hand, the Offshore Protocol provides a detailed list of requirements that need to be fulfilled in order to be granted a working authorisation. The majority of these requirements are covered by the EU *acquis* (rather than the EU draft Regulation) – although not in the same level of detail as the *acquis* is rather general and does in most cases not specifically relate to the offshore exploration or exploitation of oil and gas. However, Member States would typically have in place a regulatory system that provides for a work authorisation.

On the other hand, the EU Regulation establishes detailed requirements to ensure the safety of offshore installations, while also covering environmental protection. To implement the EU draft Regulation (now Directive) the Member States will need to build on their existing permitting systems to include these requirements (such as the Major Hazard Report).

A more analytical comparative evaluation of the two, has been made in the report prepared under the European Commission project named: “Safety of offshore exploration and exploitation activities in the Mediterranean: creating synergies between the forthcoming EU Regulation and the Protocol to the Barcelona Convention”, under the Contract: Nr. No 070307/2012/621038/SER/D2 (Milieu, 2013).

5.2.2.4 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 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 IMO. The Protocol of 1978 was adopted in response to a spate of tanker accidents in 1976-1977. As the 1973 MARPOL Convention had not yet entered into force, the 1978 MARPOL Protocol absorbed the parent Convention. The combined instrument entered into force on 2 October 1983. In 1997, a Protocol was adopted to amend the Convention and a new Annex VI was added which entered into force on 19 May 2005. MARPOL has been updated by amendments through the years.

The Convention includes regulations aimed at preventing and minimizing pollution from ships - both accidental pollution and that from routine operations - and currently includes six technical Annexes. Special Areas with strict controls on operational discharges are included in most Annexes.

- 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; the 1992 amendments to Annex I made it mandatory for new oil tankers to have double hulls and brought in a phase-in schedule for existing tankers to fit double hulls, 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 2 October 1983)
 - ⇒ Details the discharge criteria and measures for the control of pollution by noxious liquid substances carried in bulk; some 250 substances were evaluated and included in the list appended to the Convention; the discharge of their residues is allowed only to reception facilities until certain concentrations and conditions (which vary with the category of substances) are complied with.
 - ⇒ In any case, no discharge of residues containing noxious substances is permitted within 12 miles of the nearest land.

- Annex III Prevention of Pollution by Harmful Substances Carried by Sea in Packaged Form (entered into force 1 July 1992).
 - ⇒ Contains general requirements for the issuing of detailed standards on packing, marking, labelling, documentation, stowage, quantity limitations, exceptions and notifications.
 - ⇒ For the purpose of this Annex, “harmful substances” are those substances which are identified as marine pollutants in the International Maritime Dangerous Goods Code (IMDG Code) or which meet the criteria in the Appendix of Annex III.
- Annex IV Prevention of Pollution by Sewage from Ships (entered into force 27 September 2003)
 - ⇒ Contains requirements to control pollution of the sea by sewage; the discharge of sewage into the sea is prohibited, except when the ship has in operation an approved sewage treatment plant or when the ship is discharging comminuted and disinfected sewage using an approved system at a distance of more than three nautical miles from the nearest land; sewage which is not comminuted or disinfected has to be discharged at a distance of more than 12 nautical miles from the nearest land.
- Annex V Prevention of Pollution by Garbage from Ships (entered into force 31 December 1988)
 - ⇒ 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 the disposal into the sea of all forms of plastics.
- Annex VI Prevention of Air Pollution from Ships (entered into force 19 May 2005)
 - ⇒ Sets limits on sulphur oxide and nitrogen oxide emissions from ship exhausts and prohibits deliberate emissions of ozone depleting substances; designated emission control areas set more stringent standards for SO_x, NO_x and particulate matter. A chapter adopted in 2011 covers mandatory technical and operational energy efficiency measures aimed at reducing greenhouse gas emissions from ships.

5.2.2.5 Regulation (EC) No 1907/2006 concerning the registration, evaluation, authorization and restriction of chemicals (REACH)

REACH, which entered into force on 1 June 2007, requires manufacturers and importers of chemicals to evaluate the risk arising from the use of chemicals and to manage such risks. REACH applies to the manufacture, placing on the market or use of substances on their own, in mixtures or in articles and to the placing on the market of mixtures. A ‘substance’ is defined as a chemical element and its compounds in the natural state or obtained by any manufacturing process.

Key elements of REACH include registration requirements, whereby it is compulsory to register the manufacture or import of chemicals in quantities of one tonne or more per annum.

Substances of extremely high concern are also subject to authorisation. A procedure of restriction is also put in place by REACH, setting out restrictions relating to the conditions of manufacture, use(s) and/or placing on the market of a substance, or alternatively an outright prohibition on the manufacturing, use or placing on the market of a substance.

While the EU draft Regulation does not specifically refer to REACH, it is considered of relevance, as the Offshore Protocol requires the use of chemicals for the exploration and/or exploitation of resources to be regulated, limited or prohibited.

5.2.2.6 Treaty on oil pollution preparedness, response and cooperation (OPRC)

In July 1989, a conference of leading industrial nations in Paris called upon International Maritime Organization (IMO) to develop further measures to prevent pollution from ships. This call was endorsed by the IMO assembly in November of the same year and work began on a draft convention aimed at providing a global framework for international co-operation in combating major incidents or threats of marine pollution.

Parties to the International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC) are required to establish measures for dealing with pollution incidents, either nationally or in co-operation with other countries.

Ships are required to carry a shipboard oil pollution emergency plan, whereas operators of offshore units under the jurisdiction of Parties are also required to have oil pollution emergency plans or similar arrangements which must be co-ordinated with national systems for responding promptly and effectively to oil pollution incidents.

Moreover, ships are required to report incidents of pollution to coastal authorities and the convention details the actions that are then to be taken. The Convention calls for the establishment of stockpiles of oil spill combating equipment, the holding of oil spill combating exercises and the development of detailed plans for dealing with pollution incidents.

Parties to the convention are required to provide assistance to others in the event of a pollution emergency and provision is made for the reimbursement of any assistance provided.

A Protocol to the OPRC relating to hazardous and noxious substances (OPRC-HNS Protocol) was also adopted in 2000.

5.2.2.7 Agreement on the conservation of cetaceans in the Black Sea, Mediterranean Sea and contiguous Atlantic (ACCOBAMS)

ACCOBAMS, the Agreement on the Conservation of Cetaceans in the Black Sea, Mediterranean Sea and contiguous Atlantic area is 'a cooperative tool for the conservation of marine biodiversity in the Mediterranean and Black Seas'.

ACCOBAMS aims to reduce threats to cetaceans in Mediterranean and Black Sea waters and improve our knowledge of these animals, and is the first Agreement binding the countries in the two subregions, enabling them to work together on a matter of general interest. ACCOBAMS was concluded in the auspices of convention on Migratory Species (CMS) in 1996 and entered into force in 2001.

5.2.2.8 UN convention on the law of the sea (UNCLOS)

The United Nations Convention on the Law of the Sea (UNCLOS) also called 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), which took place between 1973 and 1982. The Law of the Sea Convention defines the rights and responsibilities of nations with respect to their use of the world's oceans, establishing guidelines for businesses, the environment, and the management of marine natural resources. The Convention, concluded in 1982, replaced four 1958 treaties. UNCLOS came into force in 1994.

As of January 2015, 166 countries and the EU have joined the Convention. However, it is uncertain as to what extent the Convention codifies customary international law.

5.2.2.9 Stockholm convention on persistent pollutants (POPs)

Stockholm Convention on Persistent Organic Pollutants is an international environmental treaty, signed in 2001 and effective from May 2004, that aims to eliminate or restrict the production and use of persistent organic pollutants (POPs).

Key elements of the Convention include the requirement that developed countries provide new and additional intentionally produced POPs, eliminate unintentionally produced POPs where feasible, and manage and dispose of POPs wastes in an environmentally sound manner. Precaution is exercised throughout the Stockholm Convention, with specific references in the preamble, the objective, and the provision on identifying new POPs.

5.2.2.10 International convention on the establishment of an international fund for compensation for oil pollution damage (FUND)

Although the 1969 Civil Liability Convention (CLC) provided a useful mechanism for ensuring the payment of compensation for oil pollution damage, it did not deal satisfactorily with all the legal, financial and other questions raised during the Conference adopting the CLC Convention. The 1969 Brussels Conference considered a compromise proposal to establish an international

fund, to be subscribed to by the cargo interests, which would be available for the dual purpose of, on the one hand, relieving the ship owner of the burden by the requirements of the new convention and, on the other hand, providing additional compensation to the victims of pollution damage in cases where compensation under the 1969 Civil Liability Convention was either inadequate or unobtainable.

The Conference recommended that IMO should prepare such a scheme 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 supplementary to the Civil Liability Convention.

The purposes of the Fund Convention are:

- To provide compensation for pollution damage to the extent that the protection afforded by the 1969 Civil Liability Convention is inadequate.
- To give relief to ship owners in respect of the additional financial burden imposed on them by the 1969 Civil Liability Convention, such relief being subject to conditions designed to ensure compliance with safety at sea and other conventions.
- To give effect to the related purposes set out in the Convention.

Under the first of its purposes, the Fund is under an obligation to pay compensation to States and persons who suffer pollution damage, if such persons are unable to obtain compensation from the owner of the ship from which the oil escaped or if the compensation due from such owner is not sufficient to cover the damage suffered.

Under the Fund Convention, victims of oil pollution damage may be compensated beyond the level of the ship owner's liability. However, the Fund's obligations are limited. Where, however, there is no ship owner liable or the ship owner liable is unable to meet their liability, the Fund will be required to pay the whole amount of compensation due. Under certain circumstances, the Fund's maximum liability may increase.

With the exception of a few cases, the Fund is obliged to pay compensation to the victims of oil pollution damage who are unable to obtain adequate or any compensation from the ship owner or his guarantor under the CLC Convention.

The Fund's obligation to pay compensation is confined to pollution damage suffered in the territories including the territorial sea of Contracting States. The Fund is also obliged to pay compensation in respect of measures taken by a Contracting State outside its territory.

The Fund can also provide assistance to Contracting States, which are threatened or affected by pollution and wish to take measures against it. This may take the form of personnel, material, credit facilities or other aid.

In connection with its second main function, the Fund is obliged to indemnify the ship owner or his insurer for a portion of the ship owner's liability under the Liability Convention.

The Fund is not obliged to indemnify the owner if damage is caused by his wilful misconduct or if the accident was caused, even partially, because the ship did not comply with certain international conventions. Moreover, the Convention contains provisions on the procedure for

claims, rights and obligations, and jurisdiction.

Contributions to the Fund should be made by all persons who receive oil by sea in Contracting States.

5.2.2.11 Environmental liability directive (2004/35/EC)

Environmental Liability Directive (ELD), 2004/35/EC came into force across Europe during 2009. Unlike the 96/82/EC so-called Seveso II Directive which applies to large high risk businesses the Environmental Liability Directive applies to all businesses large and small alike. Directive 2004/35/EC addresses pure ecological damage in terms of 'protected species and natural habitats' (biodiversity damage), 'water pollution damage' and 'land damage'. It applies to waters covered by Directive 2000/60/EC23 according to which the term 'surface waters' also includes territorial waters (Article 2(1) of Directive 2000/60/EC24).

This means that liability may be attributed for environmental damage occurring within 12 nautical miles from shore.

5.2.2.12 Aarhus convention

The UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters was adopted on 25th June 1998 in the Danish city of Aarhus at the Fourth Ministerial Conference in the 'Environment for Europe' process.

The Convention:

- Links environmental rights and human rights
- Acknowledges that we owe an obligation to future generations
- Establishes that sustainable development can be achieved only through the involvement of all stakeholders
- Links government accountability and environmental protection
- Focuses on interactions between the public and public authorities in a democratic context.

The subject of the Convention goes to the heart of the relationship between people and governments and deals with government accountability, transparency and responsiveness.

The Aarhus Convention grants the public rights and imposes on Parties and public authorities' obligations regarding access to information and public participation and access to justice.

The Aarhus Convention is also forging a new process for public participation in the negotiation and implementation of international agreements.

Its main three pillars are the following:

- Access to information: any citizen should have the right to get a wide and easy access to environmental information. Public authorities are obliged to provide all the information required and collect and disseminate them and in a timely and transparent manner. This includes information on the state of the environment, policies and measures taken, or

on the state of human health and safety, where this can be affected by the state of the environment. Some information is exempt from release, for example where the disclosure would adversely affect international relations, national defence, public security, the course of justice, commercial confidentiality or the confidentiality of personal data. Information may also be withheld if its release could harm the environment, such as the breeding sites of rare species;

- Public participation in decision-making: the public has a right to participate in decision-making in environmental matters. Arrangements should be made by public authorities to enable the public to be informed and subsequently to comment (if wishing to do so) on proposals for projects affecting the environment, or plans and programmes relating to the environment. Any subsequent comments are to be taken into consideration in the decision-making process. Decision makers can take advantage from people's knowledge and expertise; this contribution is a strong opportunity to improve the quality of the environmental decisions, outcomes and to guarantee procedural legitimacy.
- Access to justice: the public has the right to judicial or administrative recourse procedures in case a Party violates or fails to adhere to and the convention's principles, i.e. i.e. the right to seek redress when environmental law is infringed and the right to access review procedures to challenge public decisions that have been made without regard to the two other pillars of the Convention.

5.2.3 Main legislative framework for the environment and biodiversity protection

5.2.3.1 *Convention on migratory species (CMS or Bonn convention)*

The Convention on the Conservation of Migratory Species of Wild Animals - more commonly abbreviated to just the Convention on Migratory Species (CMS) or the Bonn Convention-aims to conserve terrestrial, marine and avian migratory species throughout their range. It is an intergovernmental treaty, concluded under the aegis of UNEP, concerned with 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 CMS is the only global and UN-based intergovernmental organization established exclusively for the conservation and management of terrestrial, aquatic and avian migratory species throughout their range. CMS and its daughter agreements determine policy and provide further guidance on specific issues through their Strategic Plans, Action Plans, resolutions, decisions and guidelines. All maintain on their websites a list of all decisions taken, guidelines issues and Action Plans adopted by the Member States.

5.2.3.2 Ramsar convention

The Ramsar Convention is an international treaty for the conservation and sustainable utilization of wetlands, recognizing the fundamental ecological functions of wetlands and their economic, cultural, scientific, and recreational value. The convention was developed and adopted by participating nations at a meeting in Ramsar, Mazandaran, Iran, on February 2, 1971 and came into force on December 21, 1975.

5.2.3.3 Bern convention

The Bern Convention on the Conservation of European Wildlife and Natural Habitats, also known as the Bern Convention (or Berne Convention), is a binding international legal instrument in the field of Nature Conservation; it covers the natural heritage in Europe, as well as in some African countries. The Convention was open for signature on 19 September 1979 and came into force on 1 June 1982. It is particularly concerned about protecting natural habitats and endangered species, including migratory species.

The convention mainly aims at:

- Conserving wild life flora and fauna and their natural habitats;
- Promoting cooperation between states;
- Giving particular attention to endangered and vulnerable species including endangered and vulnerable migratory species.

5.2.3.4 Convention on biological diversity (CBD)

The Convention on Biological Diversity (CBD), known informally as the Biodiversity Convention, is a multilateral treaty. The Convention has three main goals:

- Conservation of biodiversity;
- Sustainable use of its components; and
- Fair and equitable sharing of benefits arising from genetic resources

In other words, its objective is to develop national strategies for the conservation and sustainable use of biological diversity. It is often seen as the key document regarding sustainable development. The Convention was opened for signature at the Earth Summit in Rio de Janeiro on 5 June 1992 and entered into force on 29 December 1993.

The convention recognized for the first time in international law that the conservation of biological diversity is "a common concern of humankind" and is an integral part of the development process. The agreement covers all ecosystems, species, and genetic resources. It links traditional conservation efforts to the economic goal of using biological resources sustainably. It sets principles for the fair and equitable sharing of the benefits arising from the use of genetic resources, notably those destined for commercial use.

It is noted that the Convention is legally binding; countries that join it ('Parties') are obliged to implement its provisions.

5.2.3.5 Birds directive (2009/409/EC)

The Birds Directive (more formally known as Council Directive 2009/147/EC on the conservation of wild birds) was adopted in 2009. It replaced Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds, which was modified several times and had become very unclear. It aims to protect all European wild birds and the habitats of listed species, in particular through the designation of Special Protection Areas (SPA).

5.2.3.6 Habitats directive (92/43/EEC)

The Habitats Directive (more formally known as Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora) was adopted in 1992 as a response to the Berne Convention. It is one of the EU's two directives in relation to wildlife and nature conservation, the other being the Birds Directive mentioned above.

It aims to protect some 220 habitats and approximately 1,000 species listed in the directive's Annexes. These are species and habitats which are considered to be of European interest, following criteria given in the directive.^{[3][4]}

- Annex I covers habitats,
- Annex II species requiring designation of Special Areas of Conservation,
- Annex IV species in need of strict protection, and
- Annex V species whose taking from the wild can be restricted by European law.

The directive led to the setting up of a network of Special Areas of Conservation, which together with the existing special Protection Areas (SPA) form a network of protected sites across the EU, called Natura 2000.

5.2.4 Main legislative framework for impact assessment

The impact assessment – permitting framework is governed by the following (including ratifications of the aforementioned conventions as applicable).

Table 5-2: Current legal framework for impact assessment – permitting of offshore installations

Law/Decision/Circular/Directive and relevant EU/International documents	Reference number	Subject
Law 4014	GG 209/A/21-09-2011	On environmental permitting
Law 1650	GG 160/A/18-10-1986	On environmental protection
Law 3010	GG 91/A/25-04-2002	Harmonisation of L. 1650 with Directives: 96/61/EC & 97/11/EC
Law 3937	GG 60/A/31-03-2011	On biodiversity conservation
MD 1958 (as modified and in	GG 21/B/13-01-2012	On the environmental classification of

Law/Decision/Circular/Directive and relevant EU/International documents	Reference number	Subject
force)		projects and activities
JMD 15393/2332	GG 1022/B/05-08-22002	Only valid Annex II: on categories of activities and projects subject to Integrated Pollution Protection and Control (IPPC)
MD 48963	GG 2703/B/05-10-2012	On the specifications of Environmental Permit contents
MD 170225	GG 135/B/17-01-2014	On particularisation of indexes for environmental permitting studies
JMD 30651	GG 1817/B/02-06-2014	On particularisation of specifications of the Environmental Electronic Registry
Law 3422	GG 303/A/13-12-2005	Ratification of Aarhus Convention
JMD 1649/45	GG 45/B/15-01-2014	On particularisation of permitting processes and public participation in public hearings and consultations during environmental permitting
MD 21697	GG 224/YOΔΔ/03-05-2012	Composition of Central Council for Environmental Licensing
Law 4042	GG 24/A/13-02-2012	Environmental liability – framework of waste generation and management
Circular	16 / 4095.82	Regarding waste management permits as per article 12 of L. 4014/2011
Commission Decision	2000/479/EC of 17, EC July 2000	On the implementation of a European pollutant emission register (EPER) according to Article 15 of Council Directive 96/61/EC concerning integrated pollution prevention and control (IPPC)
EC Regulation	Regulation (EC) No 166/2006 of the European Parliament and of the Council of 18 January 2006	Concerning the establishment of a European Pollutant Release and Transfer Register and amending Council Directives 91/689/EEC and 96/61/EC
Guidance Document	European Commission, 31.05.2006	On the implementation of the European PRTR
Law 743	GG 137/A/17.10.1977	On protection of the Marine Environment
P.De. 55/1998	GG 58/A/20.04.1998	On protection of the Marine Environment (codification of L. 743)
P.De. 11/2002	GG 6/A/21-01-2002	National Emergency Action Plan for

Law/Decision/Circular/Directive and relevant EU/International documents	Reference number	Subject
		confrontation of pollution incidents from oil and other detrimental substances
Guidance note	Ref. Ares(2011)1339393 – 12/12/2011	Guidance note on the application of Directive 85/337/EEC to projects related to the exploration and exploitation of unconventional hydrocarbon
Directive	2013/30/EC of 12-06-2013	On safety of offshore oil and gas operations and amending Directive 2004/35/EC ³
Barcelona Convention 1976 including pollution caused by exploration and exploitation of hydrocarbons <ul style="list-style-type: none"> Ratified by Greek Parliament with: <ul style="list-style-type: none"> ⇒ Law 855 ⇒ Law 3022 incorporated in EU, Directive	GG 235/A/23-12-1978 GG 144/A/19-06-2002 2013/5/EC	Ratification of international convention for the protection of Mediterranean Sea from pollution and amendments
International Convention on Oil Pollution Preparedness Response and Cooperation (OPRC) 1990 <ul style="list-style-type: none"> Ratified by Greek Parliament with: <ul style="list-style-type: none"> ⇒ Law 2252 ⇒ Law 3100 	GG 192/A/18-11-1994 GG 20/A/29-01-2003	Ratification of the international conventions OPRC and amendments
International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78) <ul style="list-style-type: none"> Ratified by Greek Parliament with L.1269 as amended and in force 	GG 89/A/21-07-1982	Ratification of the International Convention for the Prevention of Pollution from Ships and amendments

³ The Greek state has recently assigned a technical / legal team with the task to draft the law that will approximate Directive 2013/30/EC into the Greek legislative framework system. It is expected that the draft law will be posted for consultation before the end of 2014 and it is expected that current EIS should be in full compliance with it.

Moreover, the current Greek permitting legislation, (in particular, MD 170225/2014), specifically refers to the aforementioned Directive, as the responsibility of compliance passes through the Environmental Permit.

Law/Decision/Circular/Directive and relevant EU/International documents	Reference number	Subject
ACCOBAMS	-	Agreement on the conservation of cetaceans in the Black Sea, Mediterranean Sea and contiguous Atlantic area
P.De. 148/2009	GG 190/A/29-09-2009	On environmental liability with regard to the prevention and remedying of environmental damage

5.2.5 International industry and International Financial Institution (IFI) standards

5.2.5.1 Good oilfield practices (GOP) and Good International Industry Practice (GIIP)

The planned project work will be undertaken in line with 'Good Oil Field Practice' and 'Good International Industry Practice'.

'Good Oil Field Practice' is a term used by certain National oil and gas regulators to describe the approach expected from operators working in their countries. Unfortunately it is not a concept that is well defined and hence its meaning can be opened to interpretation.

A commonly used definition is that 'Good Oilfield Practice' means:

'Such practices and procedures employed in the petroleum industry worldwide by prudent and diligent operators under conditions and circumstances similar to those experienced in connection with the relevant aspect or aspects of the Petroleum Operations, principally aimed at guaranteeing:

- Conservation of petroleum and gas resources, which implies the utilization of adequate methods and processes to maximize the recovery of hydrocarbons in a technically and economically sustainable manner, with a corresponding control of reserves decline, and to minimize losses at the surface;*
- Operational safety, which entails the use of methods and processes that promote occupational security and the prevention of accidents;*
- Environmental protection, that calls for the adoption of methods and processes which minimise the impact of the Petroleum Operations on the environment'.*

'Good International Industry Practice' (GIIP) is defined as:

'the exercise of professional skill, diligence, prudence and foresight that would be reasonably expected from skilled and experienced professionals engaged in the same type of undertaking under the same or similar circumstances globally. The circumstances that skilled and experienced professionals may find (relevant) when evaluating the range of pollution prevention and control techniques available to protect may include, but are not limited to, varying levels of

environmental degradation and environmental assimilative capacity as well as varying levels of financial and technical feasibility'. World Bank EHS Guidelines introduced in 2007 are technical reference documents, which provide examples of approaches that are based upon IIP. Equator Principles and IFC Performance Standards call upon these guidelines for establishing acceptable levels of performance.

In contrast there are no strict guidelines or rules established that define how 'good oil field practice' is achieved or how performance against such a standard can be measured. Good Oil Field Practice is not about following a specific procedure but about the approach that an operating company takes in discharging its duty to the government that has approved its license to operate. By definition use of GIIP principles would be Good Oilfield Practice.

It is clearly a concept that relates to the way a facility is designed, the methods of construction, its operation and maintenance as well as the way its overall management is discharged and hence is equally applicable at each stage of the asset life cycle.

Good Oilfield Practice is by definition something that changes continuously. It requires operators to monitor successes and failures in the industry and modify their internal practices appropriately. A regulator wants failures that have occurred elsewhere in the world to be avoided whilst ensuring that new, more effective approaches are implemented as quickly as possible. Good Oilfield Practice embraces equally the use of recognized and well tested Standards during the design stage, internal management/control procedures during project execution and application of risk-based inspection systems to manage cost when the facility is in service.

Energean is committed to follow 'Good Oilfield Practices' throughout day to day activities, whether they be the drilling of new wells, the installation of new facilities or the management of existing facilities. This commitment is well illustrated in the way that the current Prinos Area Development Project has been formulated and is being implemented. This project has included:

- The hiring of international staff with a proven track record of developing similar fields
- The use of internationally recognized contractors to undertake specialist technical and non-technical work
- The identification of appropriate international and industry standards to which new facilities will be designed and old facilities verified
- The development of internal controls to allow projects to be reviewed and approved as they pass from decision point to decision point Upgrade of its newly acquired drilling rig in line with international standards using equipment and staff from Original Equipment Manufacturers
- Early incorporation of risk reduction techniques in the design process
- A desire to maximize the positive impact of the project on the Greek economy by tailoring the design to match local industrial capabilities

Energean senior management and owners are committed to build upon the track-record of operational excellence established by the previous owners of the Prinos basin assets which were acquired when Energean acquired Kavala Oil in 2007. The Prinos assets are technically complex largely because of the ultra-sour nature of the crude and gas produced. Kavala Oil and

subsequently Energean have had to establish and maintain world class operational standards to ensure the safe operation of these facilities during a 30-year period. This can be demonstrated in the excellent safety record of the company and the lack of any incidents that have accidentally released hydrocarbon substances into the environment. The Prinos assets happily co-exist with a vibrant tourism industry and offshore and shore based fishing enterprises.

Although Energean has a strong operational base to call upon it has not executed a significant engineering project previously. To ensure that this new activity is undertaken in line with the principles of “Good Oil Field Practice” it has recruited a team of seasoned professionals with experience from Major upstream oil and gas companies (e.g. Shell) and construction companies (e.g. Saipem). These staff have brought with them the standards and practices used by these entities that are widely recognized as following “Good Oil Field Practice”.

The Epsilon project has progressed through a structured stage-gate process with key risks and decisions being recorded and monitored. All typical design stage controls have been applied (e.g. HAZOPS, HAZIDS) and concept design work was driven by QRA and ALARP principles from the start. All design work has been undertaken by established contractors who have an established track record of implementing similar projects successfully. Fabrication, Construction, Installation and Commissioning activities will be managed with similar vigilance. The schedule being followed allows for float and imposes no undue haste on the execution team.

The design of Epsilon enshrines all that is intended by “Good Oil Field Practice”. The development’s objective is to maximize hydrocarbon extraction whilst using the minimum of facilities that present insignificant risk to people and environment. Provisions have been accommodated in the design for subsequent phases and further development of Prinos area infrastructure. All attempts to ensure that local enterprises can contribute to the project and hence share in its value have been taken.

Subsequently the same applies for the Omicron platform, destined to follow at a later stage of development.

5.2.5.2 EBRD standards

Energean has adopted the EBRD Performance Requirements (PR) for the elaboration of Project’s ESIA and for the implementation of the Project. Projects financed by the EBRD need to meet the PRs during construction, operation and decommissioning. The ESIA and generally the environmental and social assessment process are aligned to EBRD Performance Requirements (PR), according to the EBRD Environmental and Social Policy (2014):

- *PR1 – Assessment and management of environmental and social impacts and issues:* This PR applies to all projects directly financed by the EBRD. All relevant requirements of this PR, and how they will be addressed and managed through the project design, construction, operations, and decommissioning have to be identified in the environmental and social assessment process. This project is categorised as A under PR1 and is thus subject to a comprehensive ESIA (this document).

- *PR2 – Labour and Working Conditions:* The PR recognizes that the workforce is a valuable asset, and that good human resources management and a sound worker-management relationship based on respect for workers' rights, including freedom of association and right to collective bargaining, are key ingredients to the sustainability of business activities. The implementation of the actions necessary to meet the requirements of this PR will be managed under the Company's Environmental and Social Management System (ESMS) and Human Resources (HR) System.
- *PR3 - Resource efficiency and pollution prevention and control:* The PR recognizes that resource efficiency and pollution prevention and control are essential elements of environmental and social sustainability and projects must meet good international practices and best available techniques in this regard. The implementation of the actions necessary to meet the requirements of this PR will be managed primarily in the project design and ultimately under the Company's ESMS.
- *PR4 – Health and Safety:* The avoidance or mitigating adverse health and safety impacts and issues associated with project activities is the main scope of this PR. The requirements have to do with the responsibilities of the Project Owner for provision of safe and healthy conditions for their workers and the community. While the PR is acknowledging the role of relevant authorities in protecting and promoting the health and safety of the public, the Company has the duty to identify, avoid, minimize or mitigate the risks and adverse impacts health and safety of the affected communities that may arise from the project.
- *PR5 – Land acquisition, involuntary resettlement and economic displacement:* The application of this PR is consistent with the universal respect for, and observance of, human rights and freedoms and specifically the right to adequate housing and the continuous improvement of living conditions. Certain requirements have to be addressed during the environmental and social assessment process and generally during the project's lifetime.
- *PR6 - Biodiversity conservation and sustainable management of living natural resources:* This PR recognizes that the conservation of biodiversity and sustainable management of living natural resources are fundamental to environmental and social sustainability. In this context certain requirements have to be addressed during the environmental and social assessment process and generally during the project's lifetime. Also, the implementation of the actions necessary to meet the requirements of this PR will be managed under the Company's Environmental and Social Management System (ESMS).
- *PR7 - Indigenous peoples:* The term is used in a technical sense to refer to a social and cultural group, distinct from dominant groups within national societies. This PR recognizes that projects can create opportunities for Indigenous Peoples to participate in and benefit from project-related activities that may help them fulfil their aspiration for economic and social development. There are no indigenous peoples in Greece as per

the definition presented in PR7 and therefore this PR does not apply to the Project.

- *PR8 - Cultural heritage:* This PR recognizes the importance of cultural heritage (tangible and intangible) for present and future generations. The aim is to protect cultural heritage and the project to be developed in a way that will be avoidance or mitigating adverse impacts on cultural. Certain requirements have to be addressed during the environmental and social assessment process and generally during the project's life.
- *PR9 – Financial intermediaries:* This PR is applicable only when Financial Intermediaries are appointed or are operational in a project. This PR does not apply to this Project.
- *PR10 - Information disclosure and stakeholder engagement:* This PR identifies the stakeholder engagement and information disclosure as an ongoing process which involves: (i) public disclosure of appropriate information; (ii) meaningful consultation with stakeholders; and (iii) an effective procedure or mechanism by which people can make comments or raise grievances. The process should begin at the earliest stage of project planning and continue throughout the life of the project. Also, it is an integral part of the assessment, management and monitoring of environmental and social impacts and issues of the project and therefore. Therefore, this PR should be read in conjunction with PR1.

The following table summarizes the EBRD Performance Requirements (PR) and the measures adopted by the Company as well as how those are addressed in the ESIA and in the project design:

Table 5-3: Project compliance of EBRD Performance Requirements (PR)

EBRD PR	Compliance measures adopted by Energean
PR1 – Assessment and management of environmental and social impacts and issues	<p>The Project is classified as a “Category A Project”, according to Appendix 2 of EBRD Environmental and Social Policy (2014). Specifically, it belongs to the sub-category of “extraction of petroleum and natural gas for commercial purposes” and is thus required to undergo an ESIA before a decision on EBRD financing can be made.</p> <p>Energean has established a procedure for the development of this ESIA in line with the international regulations, European and national legislation and according to EBRD PRs.</p> <p>The compliance measures adopted in the ESIA for the scope and objectives of PR1 are:</p> <ul style="list-style-type: none"> ⇒ Identification and evaluation of impacts: This ESIA and particularly chapters 09 & 11. ⇒ Application of mitigation hierarchy: chapter 12 of ESIA and existing ESM. ⇒ Environmental & Social Management System:

EBRD PR	Compliance measures adopted by Energean
	<p>chapter 13 of ESIA and existing management systems in place at Energean, which will apply to the Project.</p> <p>⇒ Environmental and Social Policy: The Company has been applying an Environmental and HSE Policy during all the years of its operation.</p> <p>⇒ Project Monitoring and Reporting: chapter 13 of ESIA; existing ESMS.</p>
PR2 – Labour and Working Conditions	<p>The basic requirements of PR2 is that the Project has to comply with national labour, social security and occupational HS laws and fundamental principles and standards embodied in ILO conventions. It must be emphasized that Greece has ratified most⁴ of ILO Conventions and generally workers' rights are protected by the Constitution and are part of the European Acquis. Energean is operating according the European and national legislation for labour and working conditions which are aligned with the requirements of PR2.</p>
PR3 - Resource efficiency and pollution prevention and control	<p>Energean has incorporated from the early project design phases the requirements of PR3. Generally, the objectives of PR3 are met by the following measures:</p> <p>⇒ Identification of project-related opportunities for energy, water and resource efficiency improvements and waste minimization: Pollution prevention and control measures had been designed in early project phase and have been incorporated in the ESIA. The applied techniques minimize any risk, as has been identified and addressed in the QRA (chapter 10). Regarding water, its use is the minimal required, since there is no process water and seawater is used for injections and as cooling water.</p> <p>⇒ Adoption of the mitigation hierarchy approach to addressing adverse impacts on human health and the environment arising from the resource: All mitigation measures are presented in chapter 12 of</p>

⁴ In particular Greece has ratified:

- Fundamental conventions: 8 of 8;
- Governance conventions (priority): 3 of 4;
- Technical conventions: 60 of 177;
- Out of 71 Conventions ratified by Greece, of which 51 are in force, 21 Conventions have been denounced; none have been ratified in the past 12 months.

(source: http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:11200:0::NO::P11200_COUNTRY_ID:102658)

EBRD PR	Compliance measures adopted by Energean
	<p>the ESIA. Furthermore, for the purpose of the ESIA a Chemical Use Plan has been developed.</p> <p>⇒ Promote the reduction of project-related greenhouse gas emissions: The carbon emissions of the Project will be negligible, because the only fuel combustion, for the new platforms, will take place in the drilling barge.</p>
PR4 – Health and Safety	<p>The way the impacts on the health and safety of local communities and project workers (routine and non-routine events) are anticipated, assessed, prevented and minimized, are examined in a special session in the ESIA (Annex 06, Annex 07, Annex 09, Annex 10, Annex 14). More specifically, the compliance measures adopted by Energean are:</p> <p>⇒ General HS requirement: The HS management system, which already existed to cover current facilities and operations, has been expanded to cover the new facilities as well. This is described in the ESMMP (Chapter 13, Annex 19) and is given separately as a separate management plan (Annex). Also, the HS measures have been incorporated in the relevant studies, which are part of the ESIA (Annex 14).</p> <p>⇒ Occupational HS: The Company has been applying an Environmental and HSE Policy during all the years of its operation, which is in compliance with all the European and national legislation and is aligned with PR3.</p> <p>⇒ Community HS: The relevant studies (ie. QRA, Oil Spill Modelling) and the Emergency Preparedness and Response are part of the ESIA (Chapter 10, Annex 07).</p> <p>⇒ Infrastructure, building, and equipment design and safety: HS considerations were taken into consideration during project the design (see par. 5.6)</p> <p>⇒ Hazardous material safety: A Chemical Use Plan, in accordance with the Offshore Protocol, has been developed (Annex 08).</p> <p>⇒ Services safety: n/a</p> <p>⇒ Traffic and road safety: n/a</p> <p>⇒ Marine traffic: current exclusion zones around the</p>

EBRD PR	Compliance measures adopted by Energean
	<p>facilities ensure safety and similar zones will be established for the future facilities (Chapter 8, 11. Annex 15).</p> <ul style="list-style-type: none"> ⇒ Product safety: n/a ⇒ Natural hazards: Natural hazards were taken into consideration during project design (see Chapter 6) and a Marine Geophysical Survey took place (Annex 03). Other geological and tectonic hazards have been examined in the baseline (Chapter 8.3). Weather extremes are not anticipated in Kavala Bay. ⇒ Exposure to disease: No endemic diseases are present in the area. Mainly, workforce will be from Kavala area, so the possibility of disease transmission is negligible. ⇒ Emergency preparedness and response: QRA, Oil Spill Modeling etc and generally the Emergency preparedness and response are part of the ESIA (Chapter 10, Annex 07, Annex 18). Furthermore, a Chemical Use Plan, in accordance with the Offshore Protocol, has been developed (Annex 08).
PR5 – Land acquisition, involuntary resettlement and economic displacement	<p>PR5 is applicable only in respect to the possible economic displacement, through limited loss of access to fishing fields. The description of the fishing fields took place in par. 8.8.2, the assessment of impacts and application of mitigation measures are described in chapters 11 and 12, respectively. Furthermore, the consultation with local authorities is presented in SEP (Annex 11). Finally, Energean is establishing a Grievance Mechanism (see Annex 11).</p>
PR6 - Biodiversity conservation and sustainable management of living natural resources	<p>The objectives of the PR are met through the elaboration of baseline studies, consideration of secondary data (Chapter 08 and Annex 05) and of the Special Ecological Study (Annex 04). The precautionary approach was followed in project design, by the examination of various alternative options (Chapter 07) and through specific mitigation measures for biodiversity (chapter 12). Special actions for biodiversity issues are defined in the ESMS (Chapter 13, Annex 19). More specifically, the compliance measures adopted are:</p> <ul style="list-style-type: none"> ⇒ Assessment of issues and impacts: Baseline conditions were identified for the biotic aspects of the marine and coastal environment, by site surveys,

EBRD PR	Compliance measures adopted by Energean
	<p>sampling and bibliography (Chapter 08, Annex 04, Annex 05). Impact assessment and mitigation took place (Chapters 11 and 12) and special actions for biodiversity issues are defined in the ESMS (chapter 13, Annex 19).</p> <p>⇒ Biodiversity conservation requirements: Small part of the existing offshore pipelines is entering a Natura 2000 Area and for that reason a Special Ecological Study (Annex 04) was carried out. Additionally, a Marine Ecology Study for the total project was elaborated (Annex 05). For marine mammals ACCOBAMS guidelines and mitigation measures have been followed (Chapter 12). Finally, the responsible Authority (Environmental Department) was consulted (see SEP, Annex 11).</p> <p>⇒ Legally protected and internationally recognised areas of biodiversity value: As mentioned above a Special Ecological Study (Annex 04) was carried out for the small part of the existing offshore pipelines which enters a Natura 2000 Area.</p> <p>⇒ Invasive alien species: The issue is covered in the Biodiversity and Wildlife Management Plan included in the current ESIA as Annex 17.</p> <p>⇒ Sustainable management of living natural resources: n/a</p>
PR7 - Indigenous peoples	n/a
PR8 - Cultural heritage	<p>The Project (existing and future facilities) is developed in an offshore area. The marine area of the Gulf of Kavala, where all offshore facilities (existing and new) are located, is well investigated and there are no signs of archaeological findings that could be of any interests. For the existing facilities there is a positive opinion by the Marine Antiquities Ephorate. For the future facilities, the same Authority will provide its opinion, as part of the environmental permitting process.</p>
PR9 – Financial intermediaries	n/a
PR10 - Information disclosure and stakeholder engagement	<p>Energean has applied a robust stakeholder engagement strategy for institutional stakeholders, has a stakeholder engagement plan (Annex 11) including public disclosure and consultation activities, and has established a Grievance Mechanism. These actions meet the objectives of PR10,</p>

EBRD PR	Compliance measures adopted by Energean
	<p>which are:</p> <ul style="list-style-type: none"> ⇒ Outline a systematic approach to stakeholder engagement that will help clients build and maintain a constructive relationship with their stakeholders, in particular the directly affected communities ⇒ Promote improved environmental and social performance of clients through effective engagement with the project's stakeholders ⇒ Promote and provide means for adequate engagement with affected communities throughout the project cycle on issues that could potentially affect them and to ensure that meaningful environmental and social information is disclosed to the project's stakeholders ⇒ Ensure that grievances from affected communities and other stakeholders are responded to and managed appropriately. <p>The engagement process during the project preparation consisted of:</p> <ul style="list-style-type: none"> ⇒ Stakeholder identification and analysis ⇒ Stakeholder Engagement planning ⇒ Information disclosure ⇒ Consultation with a selection of institutional stakeholders <p>The Grievance Mechanism is under development (see SEP, Annex 11) and Ongoing Reporting will be developed. The specific compliance measures adopted are presented in SEP (Annex 11). Furthermore, the Company carried out a Scoping exercise (Chapter 09), although it was not a prerequisite of the national legislation.</p>

5.2.6 Emission standards and limits according to the national legislation

5.2.6.1 Wastewater standards

The wastewater standards are defined in the Ministerial Decision E1b/221/65 "Wastewater disposal". The emissions standards and limits of wastewater discharged into water intended for bathing and any other use except from water consumption are the followings:

- pH 6.5-8.5
- Dissolved oxygen 5mg/l
- Coliforms: 0-50/100ml
- Free from floating or settle able solids, oil or sludge deposits derived from sewage or industrial waste
- Nontoxic, harmful, or hot wastewater

Moreover wastewater must be effectively sterilised before discharge into the final recipient.

Specific limits for the wastewater discharge in the Kavala Gulf are defined on detail by the Prefecture of Kavala through a Prefectural Decision.

Table 5-4: Emission limit values for wastewater

Parameters	Emission limit
pH	6.6 – 8.5
Temperature	35°C
Floating material	none
Suspended solids	70mg/l
BOD ₅	40 mg/l
COD	120 mg/l
Greases and oils (animal-vegetable)	20 mg/l
Mineral oils - hydrocarbons	10 mg/l
Aluminium	5 mg/l
Arsenic	0.5 mg/l
Barium	2 mg/l
Boron	2 mg/l
Cadmium	0.5 mg/l
Chromium Cr ³⁺	2 mg/l
Chromium Cr ⁶⁺	0.2 mg/l
Iron	20 mg/l
Dissolved Iron	4 mg/l
Manganese	2 mg/l
Mercury	0.01 mg/l
Nickel	2 mg/l

Parameters	Emission limit
Lead	0.1 mg/l
Copper	2 mg/l
Selenium	0.1 mg/l
Tin	10 mg/l
Zinc	1 mg/l
Cyanides	0.5 mg/l
Chlorine (free)	2 mg/l
Sulphites	2 mg/l
Sulphides	2 mg/l
Fluorides	10 mg/l
Phosphorus	30 mg/l
Total Ammonia	30 mg/l
Nitrogen as N in (NO ₃)	3 mg/l
Total Phenols	0.5 mg/l
Aldehydes	1 mg/l
Aromatic solvents	0.4 mg/l
Nitrogenous solvents	0.2 mg/l
Chloride solvents	2 mg/l
Total toxic substances	3 mg/l
Total coliforms	500 K/100ml
Fecal coliforms	100 K/100ml

5.2.6.2 Wastewater 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 2 October 1983)

Covers prevention of pollution by oil from operational measures as well as from accidental discharges; the 1992 amendments to Annex I made it mandatory for new oil tankers to have double hulls and brought in a phase-in schedule for existing tankers to fit double hulls, which was subsequently revised in 2001 and 2003.

Annex IV Prevention of Pollution by Sewage from Ships (entered into force 27 September 2003)

Contains requirements to control pollution of the sea by sewage; the discharge of sewage into the sea is prohibited, except when the ship has in operation an approved sewage treatment plant or when the ship is discharging comminuted and disinfected sewage using an approved system at a distance of more than three nautical miles from the nearest land; sewage which is not comminuted or disinfected has to be discharged at a distance of more than 12 nautical miles from the nearest land.

Annex V Prevention of Pollution by Garbage from Ships (entered into force 31 December 1988)

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 the disposal into the sea of all forms of plastics.

5.2.6.3 Ambient air quality standards

In Greece, there are applicable statutory limit values for pollutants sulphur dioxide, particulate matter (PM10, PM2.5), nitrogen dioxide, lead, ozone, carbon monoxide, benzene, according to the air quality limits established in the European Union. With a series of new directives on air pollution, the European Union adopted new limits for various air pollutants. These limits refer to the protection of human health as well as ecosystems.

The following table lists the directives on air pollution that have been issued and the corresponding legislation incorporating those directives into Greek law.

Table 5-5: European and National Legislation on Air Pollution

EU Legislation	GR Legislation
Directive 2008/50/EC on of the 21 st of May, on ambient air quality and cleaner air for Europe (repealing several directives)	MD 14122/549/E.103/2011 (GG 488/B/30.3.2011) Measures to improve air quality, in compliance with the provisions of Directive 2008/50 / EC "on the air quality and cleaner air for Europe "of the European Parliament and of the Council of the European Union May 21, 2008»
Directive 2004/107/EC relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air.	JMD 22306/1075/E103, GG 920/B/8.6.07) Establishment of target values and detection limits for concentrations of arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air, in accordance with the provisions of Directive 2004/107/EC

Directive 2008/50/EC defines for each pollutant a limit value for the protection of human health, and the year of entry into force. For some pollutants a margin of tolerance is given, with indicative limit values, which apply in the meantime until the entry into force of the limit. The tolerance decreases every year, so that it is reduced to zero by the date the new limit value is to be met.

The current legislation on air pollutants, the corresponding concentration limits and the year of application are listed below:

Table 5-6: Air Quality limit values according to National and European Legislation

Pollutant	Limit Value	Date by which limit value is to be met	Margin of tolerance
Carbon Monoxide (CO) (mg/m ³) (Directive 2008/50/EC)	10 Maximum 8-hour daily value	1/1/2005	60%
Benzene (C ₆ H ₆) (µg/m ³) (Directive 2008/50/ EC)	5 Mean annual value	1/1/2010	
Sulfur Dioxide (SO ₂) (µg/m ³) (Directive 2008/50/ EC)	350 Mean hourly value, not to be exceeded more than 24 times per year	1/1/2005	150 µg/m ³ (43%)
	125 Mean daily value, not to be exceeded more than 3 times per year	1/1/2005	
	500 Alarm limit, for 3 consecutive hours		
Nitrogen Dioxide (NO ₂) (µg/m ³) (Directive 2008/50/ EC)	200 Mean hourly value, not to be exceeded more than 18 times per year	1/1/2010	
	40 Mean annual value	1/1/2010	
Particulates PM ₁₀ (µg/m ³) (Directive 2008/50/ EC)	50 Mean daily value, not to be exceeded more than 35 times per year	1/1/2005	50%
	40 Mean annual value	1/1/2005	20%
Lead (Pb) (µg/m ³) (Directive 2008/50/ EC)	0,5 Mean annual value	1/1/2005	100%
Ozone (O ₃) (µg/m ³) (Directive 2008/50/ EC)	120 Maximum daily mean 8-hour value, not to be exceeded more than 25 times in 3 years	1/1/2010	
	180 Notification limit, mean hourly value		

5.2.7 Alert thresholds for short term response measures

The Ministerial Decision 14122/549/E103/2011 has established alert thresholds to limit pollution in cases where mainly due to extremely unfavourable meteorological conditions significant increase is expected in pollution values. The thresholds for the emergency measures established by the above mentioned decisions are related to the pollutants NO₂, SO₂ and O₃. For particulate matter (PM₁₀) an alert limit is not provided by European and Greek legislation. The thresholds for initiation of short-term response measures to address air pollution are presented below:

Table 5-7: Alert thresholds for short term response measures

Pollutant	Averaging period	Threshold
SO ₂	1 hour	500 µg/m ³ (*)
NO ₂	1 hour	400 µg/m ³ (*)
O ₃	1 hour	240 µg/m ³ (*)

(*)To be measured over three consecutive hours

5.2.7.1 Noise standards

The allowable noise limit is specified at 65 dBA at the boundaries of the installation according to the Presidential Decree 1180/81 (article 2, Government Gazette 293 A/81).

5.2.7.2 Hazardous waste

The hazardous waste management is defined in the Ministerial Decision 19396/1546/97 (Government Gazette 604 B/18.7.97) in accordance with the EC Directives 91/689/EEC and 94/904/EEC and 96/350/EC. For temporary storage, storage, handling and exploitation, a prefectural permission is required.

5.2.7.3 Solid and non-toxic waste management

The management of solid and non-toxic waste is defined in the Ministerial Decision 69728/824/96 (Government Gazette 358 B/17.5.96). The management of used mineral oils and non-lead sludge is defined in the Ministerial Decision 98012/2001/96 (Government Gazette 40 B/19.1.96)

5.3 PLANNING FRAMEWORKS (NATIONAL – REGIONAL)

The approved National Spatial Planning Framework and Sustainable Development for the Industrial Sector (JMD 11508 (GG 151/TAAΠ/13-4-2009, "Approval of special spatial planning framework and sustainable development for the industry and the strategic environmental assessment", classifies the Region in industrial zones aiming at the sustainable development (protection of the environment, social equality and cohesion and economic prosperity).

The important point of the spatial organization of industry is the area along the Egnatia, which includes the existing industrial poles of Kavala – Xanthi – Drama zones (intensification area) and extended regions. New expansion regions may be present in the northern part of Greece, with the integration of free zones in large organized receptors, such as Kavala and Alexandroupoli ports for Free Trade Zone.

Following the Guidelines for spatial organization for industry (Annex I), Kavala Prefecture is the major area of oil extraction and other mining and quarrying activities that have consequently developed the production of chemicals and non-metallic minerals industrial activities.

The spatial organization of industry is based in the southern area of Kavala region between Egnatia Motorway and port of Kavala.

The Industrial Area of Kavala (152D/1981, GG 1465D/2003) is located within the Regional Unit of Kavala. It is developed within an area of 2.08 km², in the area of the settlement "Pontolivado", northeast of the city of Kavala, on the (old) National Road Kavala - Xanthi.

The area of aquaculture shown in the draft Special Framework for Spatial Organization of aquaculture activity (GG 2505 B / 04.11.2011) and more specifically in the area B13 and B14. The area of the offshore development is located outside the aquaculture activity area.

The Industrial Park of Kavala was established by the Joint Ministerial Decision (JMD) 22773/1887/24-10-2005 (GG B-1466), which determined the location, extent, limits, the type of Industrial Area, environmental terms and the entities responsible for the establishment and implementation of the Industrial Park.

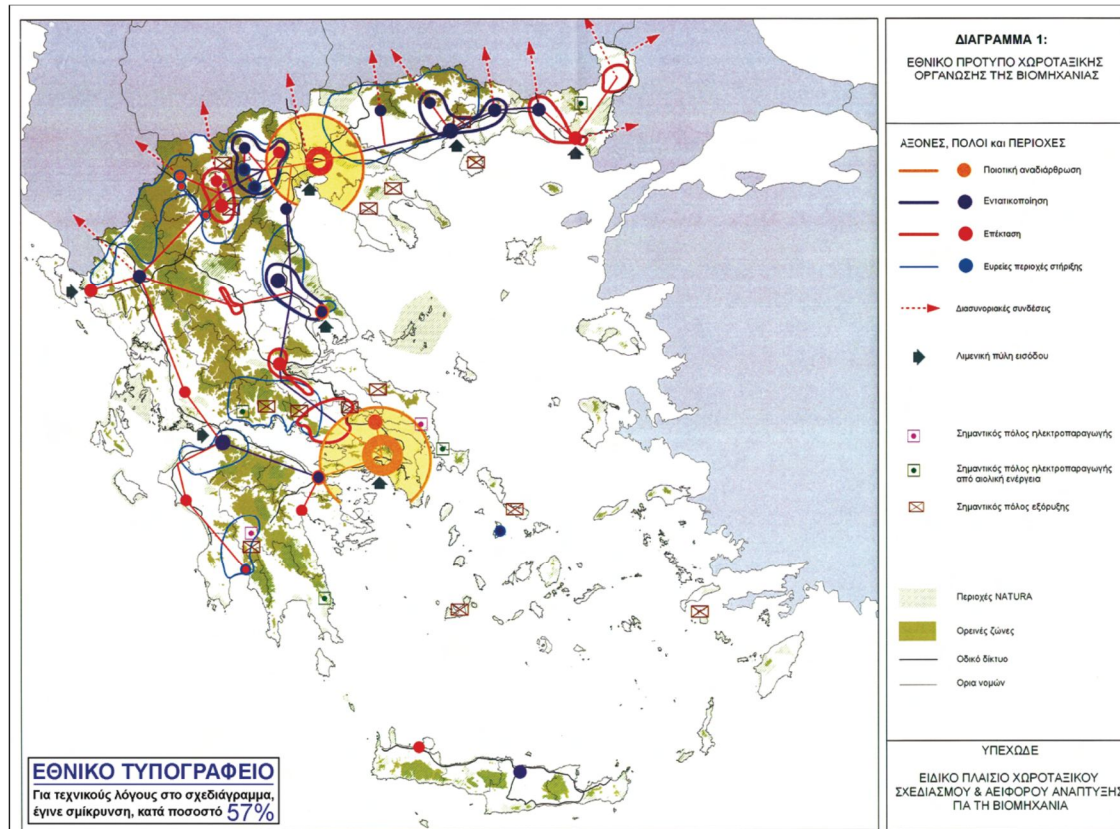
The aforementioned Special Framework for Spatial Planning and Sustainable Development for Industry complements the already approved:

- General framework of Spatial Planning and Sustainable Development (GG 128/3.7.2008)
- Special Framework and Sustainable Development for Aquacultures (GG 2505/B/4.11.2011)
- Special Frameworks for Spatial Planning and Sustainable Development of Tourism (GG 1138B/11.6.2009, GG 3155B/12.12.2013)
- Special Framework and sustainable Development for Renewable Energy Sources (RES) (GG 2464B/3.12.2008);

Finally the existing and future planned oil and gas industry related activities that are situated in the broader area of Kavala and East Macedonia include:

- Underground storage facilities;
- DESFA pipelines;
- Trans Adriatic Pipeline- TAP and
- Gas Interconnector Greece-Bulgaria – IGB.

Finally, the oil transport pipeline of Burgas – Alexandroupoli as well as South Stream, although



approved, are not longer considered as a possible – planned infrastructure facilities.

Map 5-1: National spatial organization of industry (Source: National Spatial Planning Framework and Sustainable Development for the Industrial Sector)