



**BLOCK 10 (KYPARISSIAKOS) LEASE AREA
ENVIRONMENTAL REPORT 2019**

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KYPARRISIAKOS BLOCK 10 LEASE AREA – ENVIRONMENTAL REPORT 2019

HSE Policies & System, Environmental Studies and Implementation

1. Introduction

Hellenic Petroleum S.A. (HELPE S.A.) has operated during the past in the Ionian Seas as an operator and has gained a deep understanding and knowledge of the context, regulations, local communities' relations and management that could guarantee a smoother development process in the area under lease with no impact to the environment and the local communities.

On October 10th 2019, the Hellenic Parliament ratified the Lease Agreement, which has been awarded by the Greek State for Hydrocarbon Exploration and Production in the offshore deep-water area of Block 10 (Kyparissiakos Gulf) (Law 4630/10.10.2019). HELPE S.A., acting as Operator, is fulfilling its commitments and has planned the exploration work program by implementing the most up-to-date, safe and environmentally friendly technological methods and practices.

According to the Provisions of Article 12 for «Environmental Protection» «The Lessee shall include in each Annual Work Program and Budget to be submitted to the Lessor, an environmental report on the work to be undertaken as provided in that document, as well as on the work undertaken in accordance with the preceding Annual Work Program and Budget».

During the last quarter of 2019, HELPE S.A. has prepared and launched a Request for Quotation (RFQ) for the provision of services for the preparation of the Environmental Baseline Report (EBR) prior to the commencement of any Oil & Gas exploration operations in Block 10 (Kyparissiakos) Lease Areas as well as the preparation of the Environmental Action Plan (EAP) prior to the commencement of the geophysical acquisition program in Block 10 (Kyparissiakos) Lease Area.

2. HSE Studies and Reports

2.1. Environmental Baseline Report

The purpose of the Environmental Baseline Report is the collection of data, the survey and the evaluation of the environmental condition in the Lease Area in aim to:

- survey the condition of the environment within the exploration area before starting any work, to ensure non liability of the contractor for any environmental damage that may occur in the lease area from other activities.
- be part of an integrated system for monitoring the condition of the environment in the lease area, to allow the monitoring of any impact during the individual stages of the exploration program.

The elaboration of the Environmental Baseline Report (EBR) on the Lease Area will be based on the JMD 30373/2017 that sets out the specifications for environmental licensing files of projects and activities and on the requirements of JMD JMD 30373/2017 (*“Approval of the Strategic Environmental Impact Assessment for the exploration and exploitation of hydrocarbons in eleven sea areas in the Ionian Sea”*), according to which environmental indicators, shall be used as fundamentals of monitoring and they shall represent in a comprehensive way, important aspects of developments in the environment.

The Report addresses the existing physical, biological and socioeconomic environment and sensitivities of Kyparissiakos Gulf (Block 10) Lease Area. The Report is referred to topics regarding the physical environment such as geography, bathymetry and seabed morphology, seabed sediments, geology, oceanography, meteorology and acoustic environment. Regarding the reference to the living environment, it concerns the marine ecosystem, marine vegetation, plankton, benthos, fish and fish habitats, aquacultures, marine mammals, seabirds, sea turtles, protected sites and sensitive habitats. The socioeconomic environment is also addressing, including the local economy, tourism, commercial fishing, submarine cables, shipping and ports, and a reference to wrecks and the archaeology of the area is included as well.

The EBR will be prepared and submitted for review and approval to Competent Authorities (Hellenic Hydrocarbons Resources Management – HHRM).

2.2. Environmental Action Plan

Purpose of the **Environmental Action Plan** will be:

1. the assessment and evaluation of impacts of the proposed activities on all environmental components;
2. the assessment and evaluation of environmental risks for the seismic activity;
3. the proposition of mitigation measures in order to minimize the risks and impacts and the relevant monitoring during the project activities.

In particular, in the Decision of the approval of the SEA study the following requirements of the **Environmental Action Plan** were set as below.

Seismic air-gun surveys (geophysical operations), which according to the applicable legislation are not subject to an environmental licensing obligation, will be carried out under a detailed framework of measures for the protection of the marine environment, which will be described in an appropriate Environmental Action Plan, which should at least meet the requirements of the next paragraph. Approval of EAP, which is a prerequisite for the implementation and consequently for the commencement of geophysical operations, will be granted by the Competent Authority or the relevant Minister after the consent of the Directorate of Environmental Licensing of Ministry of Environment and Energy.

The objectives of the Environmental Action Plan (EAP) are:

- "Seismic surveys" should be, thoroughly and documented, in accordance with every clause of the environmental legislation, including provisions on the protection of species or special areas and the prevention of pollution.
- Minimize impacts of "seismic surveys" on critical elements of marine ecology, such as marine mammals (especially cetaceans and seals) and sea turtles (especially *Caretta Caretta*).
- Implementation of all necessary measures and methods to prevent any kind of pollution of the sea, including at least the methods of solid and liquid waste management, accident management and the use of chemical substances.
- Disturbance regulation in existing maritime activities such as fishery.

In particular, with regard to the prevention of impacts on the cetaceans, measures of the SEA of "seismic surveys" should include at least the following issues:

- Compliance with the guidelines and commitments of transnational agreements signed by Greece, especially ACCOBAMS.
- A gradual increase in acoustic energy (the soft-start technique) to allow, to noise-sensitive mammals and cetaceans, the opportunity and sufficient time to move temporarily to a safe distance.
- Selecting appropriate equipment whose acoustic power is the minimum possible for the intended purpose and in any case does not exceed the levels of trauma or behavioral change (as reported in international scientific literature), even at short distances from the source of the sound waves.

- A sufficient number of suitably trained marine mammals observers (MMO) on board to identify, with the use of visual and acoustic means of monitoring, marine mammals and stop the air-guns if any of them enters the buffer zones.
- Project Planning of seismic exploration to ensure that:
 - Lines should meet at least with underwater trenches, minimizing the possibility of affecting cetaceans in deep-water environment.
 - Density of the survey seismic grid is the minimum possible (or the distance of a line from the next one should be the maximum possible), minimizing any repetitive noise disturbances in the marine mammals of the area,
 - A single transit of the ship from each seismic line, in order any possible noise disturbance to the species of the site to be temporary and non-systematic, and thus preventing any permanent changes in marine ecosystems.

In order to select the time of the survey implementation, it should be stated that the winter season is preferable, considering the fact that mammals are less affected in their reproduction. Especially regarding the prevention of impacts on Caretta-Caretta sea turtles, the EAP should consider whether the measures proposed for the protection of cetaceans, in accordance with the above condition are adequate to avoid impacts on the population and reproduction rate of the protected species of the Ionian Sea, by providing relevant documentation and / or specialization of these measures in.

The potential impacts of the project activities will be identified, with regard to abiotic, biotic and human environment. Particular attention will be given to marine noise, marine ecology and socioeconomics environment. The impact of marine noise will be evaluated based on the results of modelled noise propagation. Identified effects will be focused on the impact on marine mammals due to marine noise that, considering the scheduled period and the limited duration of the activity, can be considered moderate for the presence of the areas of special importance for cetaceans and due to the possible behavioral response of mammals to noise.

The EAP will be prepared and submitted for review and approval to Competent Authorities (Hellenic Hydrocarbons Resources Management – HHRM).

2.3. Establishment of the Environmental Unit

In the context of the Joint Ministerial Decision (JMD), of 3 October 2017 for the approval of a Strategic Environmental Assessment (SEA) for the Hydrocarbon Research and Exploitation Program in Block 10 (Kyparissiakos) Lease Area and under Section BII (Conditions, Limitations and Guidelines for the protection and management of the environment that must accompany the approval of the Program) for the establishment of an Environmental Unit for the fuller protection and management of the Environment,

More specifically the Environmental Unit will have to ensure that:

- has the responsibilities and jurisdictions (including its position in the organization chart) necessary for effective intervention in the design, implementation and operation of each project that will occur under the program, as well as the subsequent phases of completion or abandonment.
- should be focused on environmental tasks, which can only be combined with issues related to Health and Safety (HSE) while maintaining the independency of the other units of the organization chart which are related to technical or economic aspects.
- is organized with sufficient and adequately qualified personnel
- has the infrastructure and adequate resources necessary for its efficient operation
- is constantly being updated on state-of-the-art technologies developed or applied internationally in environmental aspects in the field of exploration and productions of hydrocarbons.

In addition, the Environmental Unit will be the link on all environmental issues with local communities and relevant departments of the administration.

According to the above, Hellenic Petroleum S.A., which has been granted the right to explore and exploit hydrocarbons, has to set up, organize and operate at its sole discretion, a separate Environmental Unit which will be responsible for the environmental protection and management of the environment supervised by the Competent Authority (HHRM). In addition, Hellenic Petroleum S.A. has to present the Environmental monitoring results of the program in an annual report published on the website of the Environmental Unit. This website should be developed by HELPE S.A. and allow the public concerned to express its opinion on the content of the report.