



**BLOCK 10 (KYPARISSIAKOS) LEASE AREA  
ENVIRONMENTAL REPORT 2020**

## Contents

1.	Introduction .....	3
2.	HSE Studies and Reports .....	4
2.1.	<i>Environmental Baseline Report -Stage I</i> .....	4
2.2.	<i>Environmental Action Plan</i> .....	5
2.3.	<i>Establishment of the Environmental Unit</i> .....	6
2.4.	<i>Environmental Monitoring and Recording of Critical Biodiversity Indicators</i> .....	7
2.5.	<i>Marine Seismic HSE &amp; HSE Seismic Project Plan</i> .....	9

## KYPARRISIAKOS BLOCK 10 LEASE AGREEMENT AREA – ENVIRONMENTAL REPORT 2020

### HSE Policies & System, Environmental Studies and Implementation

#### 1. Introduction

Hellenic Petroleum Exploration & Production of Hydrocarbons Kyparissiakos Gulf Single Member S.A. (HELPE Kyparissiakos), 100% subsidiary of HELLENIC PETROLEUM EXPLORATION AND PRODUCTION OF HYDROCARBONS (UPSTREAM) S.A., owns all the rights to explore and produce hydrocarbons deriving from the Lease Agreement with the Greek State in the offshore area of Kyparissiakos Gulf (Block 10), total area 3.420,6 sq. km. HELPE Kyparissiakos Gulf SA (100%, Operator) officially signed the Lease Agreement with the Minister of Environment & Energy on April 9, 2019 and on October 3, 2019, the Greek Parliament ratified (Law 4630/10.10.2019).

HELPE Kyparissiakos, acting as Operator, is fulfilling its commitments and planning of the first phase of the exploration work program by implementing the most up-to-date, safe and environmentally friendly technological methods and practices with the outmost respect to local societies and socioeconomic activities.

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 2020, HELPE Kyparissiakos has prepared and submitted to Competent Authorities the following Environmental Studies:

1. The Environmental Baseline Report of Stage I
2. The Environmental Action Plan for a 2D Marine Seismic Acquisition

Both Studies submitted to Competent Authorities (HHRM & DIP) within 2020.

Moreover, HELPE Kyparissiakos during 2020 prepared and released a Request for Quotation (RfQ) related to Marine HSE Consultancy Services assisting in the Tendering process for the selection of a competent international seismic contractor.

## 2. HSE Studies and Reports

### *2.1. Environmental Baseline Report -Stage I*

The purpose of the Environmental Baseline Report -Stage I, was 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 exploration activity, to ensure non-liability of the contractor for any environmental damage that may occur either/or that have already occurred in the lease area due to other activities.
- be part of an integrated system for monitoring the condition of the physical and anthropogenic environment in the lease area, in aim to prevent, detect and mitigate any impact during the individual stages of the exploration program.

The elaboration of the Environmental Baseline Report (EBR) for the Lease Area was 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 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 was referred to topics regarding the physical environment such as geography, bathymetry, seabed sediments and morphology, geology, oceanography, meteorology and existing noise levels. 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 has been also recorded, including the local economy and its main activities such as tourism, commerce, fishing, , shipping, ports, telecommunication infrastructure (submarine cables). Within the scopes of the study there is also a reference to recorded or possible sites of shipwrecks and other sites of archaeological interest.

The EBR Stage I was submitted by HELPE Kyparissiakos for review and approval to Competent Authorities (Hellenic Hydrocarbons Resources Management – HHRM) on 27<sup>th</sup> of July 2020. The EBR Stage I has been officially approved by written response of HHRM and was received by HELPE Kyparissiakos on 18<sup>th</sup> September 2020.

## ***2.2. Environmental Action Plan***

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

- Detailed and documented compliance of the proposed activities with all the requirements of the applicable environmental legislation, including the provisions concerning the protection of marine species and sensitive habitats and the avoidance of any kind of pollution due to exploration activities.
- Avoiding any impact of the proposed activities on critical elements of marine ecology, such as marine mammals (cetaceans and monk seals), sea turtles (*Caretta Caretta*) and seabirds.
- Implement all necessary measures and methods related to the prevention of any incident of marine pollution, including solid and liquid waste management methods.
- Limiting disturbances to existing marine activities such as fishing and fish farms.
- Assess and evaluate the effects of the proposed activities on all individual environmental elements.
- Assess and evaluate the environmental risks for the proposed activities.
- Propose prevention and mitigation measures to minimize risks and impacts and execute an environmental monitoring program during project activities.

In order to select the time of the survey implementation, it should be stated that the winter season is preferable, considering the fact that marine species (cetaceans, sea turtles, seabirds) populations are less affected during that period. Especially, the EAP study 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.

The potential impacts of the project activities was identified, with regard to abiotic, biotic and human environment. Particular attention was given to marine noise levels, the marine ecology and the socioeconomic environment. The impact of marine noise was evaluated based on the results of noise propagation modelling. Identified effects of the seismic acquisition program, were focused on the impact on marine mammals due to noise produced during the survey that, considering the scheduled period and the limited duration of the activity, can be considered moderate for the areas of special importance for cetaceans and due to the possible behavioral response of marine mammals to noise produced due the seismic acquisition program.

In aim to protect the marine fauna, with particular regard to the marine mammals, mitigation measures will be implemented during the survey in accordance to ACCOBAMS and JNCC Guidelines, and more specifically about the following:

- presence on board of qualified Marine Mammals Observers (MMO) and technicians for Passive Acoustic Monitoring (PAM);

- adoption of the soft-start technique and establishment of an Exclusion Zone around the seismic vessel where visual and acoustic monitoring of the presence of marine mammals will be continuously carried out and confirmed in the field;
- establishment of Exclusion zones of normal operation of airguns within environmentally sensitive areas as well as within a distinct buffer zone around the sensitive areas.

The EAP has been submitted by HELPE Kyparissiakos for review and approval to Competent Authorities (Hellenic Hydrocarbons Resources Management – HHRM) on 12<sup>th</sup> of October 2020 and is expected to be approved during the 1<sup>st</sup> quarter of 2021.

### ***2.3. Establishment of the Environmental Unit***

In the context of the Joint Ministerial Decision (JMD), of 3 October 2017 for the approval of the 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) the establishment and operation of an Environmental Unit for the fuller protection and management of the Environment, is required. The Environmental Unit will operate under the control and responsibility of the Operator. More specifically the Environmental Unit will have to ensure that:

- has the responsibilities and jurisdictions (including its position in the Operator's 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 related activities.
- should be focused on environmental tasks, which can only be combined with issues related to Health, Safety and Environment (HSE), while maintaining the independency of the other units of the organization chart which are related to technical or economical aspects.
- is organized with sufficient and adequately qualified personnel
- has the infrastructure and adequate resources that are 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 Authorities.

According to the above, HELPE Kyparissiakos, which has been granted the right to explore and exploit hydrocarbons in Block 10 Lease Area, already established, and operates at its sole discretion, a separate Environmental Unit which will be responsible for the environmental protection and management of the environment. This Environmental Unit will cooperate with

the Competent Authority (HHRM) on environmental issues in the context of exploration and exploitation activities in the area of Block 10. In addition, HELPE Kyparissiakos has to present the environmental monitoring results of the program in an annual report published and uploaded on the website of the Environmental Unit. The overall aim of the website is to allow the public concerned to express its opinion on the content of the reports.

#### ***2.4. Environmental Monitoring and Recording of Critical Biodiversity Indicators***

In the context of Environmental Monitoring and Recording of Critical Environmental Indicators of Biodiversity, such as marine mammals (cetaceans and monk seals), sea turtles and seabirds, HELPE Kyparissiakos has assigned to NCC (Nature Conservation Consultants Ltd) a biodiversity monitoring program for conducting a survey of the status of Important Fauna Species in the Kyparissiakos Lease area (Block 10).

The Project works consist of the following four work packages:

1. Pelagic survey for marine turtles-seals and seabirds at sea with research vessels and ultralight aircraft in order to establish the presence status and abundance of marine species at sea.
2. Coastal survey for Monk Seals pupping sites and Seabirds sites in the coastal zones of the adjacent Nature 2000 sites including mapping the existence of marine caves, appropriate terrestrial habitats and refuges of the Mediterranean Monk Seal, as well as record their features and environmental characteristics, assessment of the possible use of the refuges by Monk Seal, assessment of sites and populations of Seabirds, such as Mediterranean Shag and Scopoli's Shearwater and, assessment of the conservation status of breeding seabirds in the vicinity of the Kyparissiakos Lease area and identify existing and potential threats
3. Telemetry of marine turtles including tagging sea turtles with satellite transmitters and attachment of flipper tags in order to carry out post-nesting tracking of breeding turtles and tracking of turtles found inside block 10, and to carry out aerial surveys using drones or ultralight aircraft to determine distribution and density.
4. Telemetry of Scopoli's shearwaters breeding on Strofades islets

The above work packages involved several monitoring surveys, which combined with the existing bibliographic information on the presence of Cetaceans, Seals, Seabirds and Sea Turtles in the wider project area, and identification and mapping of the most sensitive areas. The review of the marine environment significantly helped to update the existing data for the Mediterranean Monk Seal, Cetaceans, Seabirds and Sea Turtle populations, and also other protected and/or threatened species in this particular part of the Ionian Sea, where the project lease area is located. The recording of marine mammals, was made by a MMO team (2 people) which consisted of experienced marine biologists, approved by the JNCC, with previous experience in observing marine mammals in the Hellenic seas. The project team deployed an appropriate research vessel for open sea surveys, as well as an inflatable RIB boat

and related equipment for offshore and coastal surveys, in order to identify breeding sites - and congregation sites of Seals, Cetaceans and Seabirds.

### **2020 – 2021 onwards**

The Pelagic field surveys which were executed between May and September 2020 under the framework of work packages 1 and 4 showed the following results:

- Confirmation of a significant presence Striped Dolphins and Cuvier’s Beaked Whales in the Project area.
- Confirmation of the presence of the Loggerhead Turtle, Scopoli’s Shearwater and Yelkouan Shearwater in the Project Area.
- The recorded low abundance of Scopoli’s Shearwater and Yelkouan Shearwater indicate that the Project Area during Autumn does not consist an important foraging area for these two species.
- The key importance of the Project Area for the Scopoli’s Shearwater is the existing of the largest species breeding colony in the Ionian Sea and in Greece is located on Strofades Islets, while the surrounding marine areas are used primarily for creation of rafts before entering colony. The marine areas in the Project Area away from the colony have a minor importance for foraging and rest in comparison to other foraging areas the Adriatic Sea, western Ionian Sea, Inner Ionian Sea, Patraikos Gulf and Korinthiakos Gulf. Therefore the most important marine area for the Scopoli’s Shearwaters in the Project Area is considered the marine area within a 3 n.m. radius around Strofades Islets, where all breeding and non-breeding (i.e. prospecting) birds from Strofades Islets which are visiting the colony during the night gather in rafts from late afternoon on and enter the colony usually during the darkest period of the night. The number of birds visiting the colony per night is consider to be significantly elevated during early chick rearing period, when the adult breeders visit the colony very frequently (every night or every few night). During the rest of breeding period the congregations of birds per night are expected to be smaller, because the single foraging trips last from few days to few weeks.
- Other areas of increase abundance of Scopoli’s Shearwaters in the Wider Project Area are the western tip of Zakynthos Island and the western tip of Kyllini Peninsula where bottlenecks are created for shearwaters which are flying between the colony on Strofades and their foraging areas either in the western Ionian Sea/Adriatic Sea and Inner Ionian Sea/Patraikos Gulf/Korinthiakos Gulf, respectively.

The Second Stage of the Project, telemetry of marine turtles as well as telemetry of Scopoli’s shearwaters meaning are anticipated to be continued during 2021.



## ***2.5. Marine Seismic HSE & HSE Seismic Project Plan***

Hellenic Petroleum (HELPE) being the Operator, desire to acquire 1200 km 2D Seismic Data in the Kyparissiakos Block-10 by executing a towed streamer 2D Marine Seismic Survey (MSS) which shall fulfil the minimum exploration work program agreed under the Lease Agreement for the first exploration phase (3 years duration). The new 2D MSS data will cover an area of approximately 3421 square kilometers (sq.km) which corresponds to the entire Block 10 concession. The exact coordinates of the 2D MSS as well as the proposed seismic line location will be defined at a later stage, following the seismic vessel contractor award.

During 2020, HELPE Kyparissiakos has issued a Tender for the provision of HSE marine consulting services by experienced professional(s) for the 2D Marine Seismic Survey acquisition program in Kyparissiakos Gulf. Main aspects covered from this tender are to provide Project management, Contract and Bids evaluation (i.e. preparing and reviewing tenders, bid reviews, participate in Contract finalization etc.) and Technical auditing services as well as assist in the development/improvement of an effective safety & environmental management systems and processes including support to develop HSE bridging documentation and HSE plans. More analytically HSE Consultancy Services, upon contract award and within Year 2021, will be focused on the following items:

### **Item 1**

- Assist to the preparation of the Invitation to Tender document (including form of contract) for selecting the MSS contractor. The specific services include the drafting of the HSE aspects of the project to enable the contractors to submit a tender that will provide a crew that can fulfill the requirements efficiently and operate with an expectation of zero HSE incidents. In addition, selection criteria and check lists and questionnaires for evaluating HSE aspects of each bidder shall be prepared.

### **Item 2**

- Participate in the evaluation of the bids submitted for the MSS in relation to the HSE aspects of each bid. Recommend preferred contractor(s) on HSE aspects. Review final proposal.

### **Item 3**

- Provide support to develop HSE bridging documentation between HELPE and the selected contractor and participate in the contract finalization, which is the acceptance of an HSE management process that all parties have agreed to apply.
- Provide support to develop Project HSE Plan (including emergency response plans, Shipboard Oil Prevention Emergency Plan-SOPEP) in cooperation with the selected seismic contractor prior to the arrival of the survey vessel and other equipment. The Project HSE Plan will be initially drafted by the selected seismic contractor.

**Item 4**

- Perform HSE Vessel Audits while the vessel is at the initial port of call in Greece and before the commencement of work (including but not limited to a compilation of an environmental audit report and a full environmental statement of the vessel's environmental performance, impacts and management).
- Perform HSE audits to chase vessel and recommend to HELPE Management that all HSE systems are in place and functioning before start of the MSS activity.

**Item 5 (contingent)**

- Perform HSE audits while the MSS is progressing,
- Investigate accidents, incidents, near misses or other unforeseeable events,
- Review of the HSE plan.