Lebanese Oil & Gas Initiative

المبادرة اللبنانية للنفط والغاز

Strategic Environmental Assessment for Offshore Oil and Gas Activities

Reviewing Manual

October, 2018

Lebanese Oil & Gas Initiative
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Commissioned by:
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Geoflint

Strategic Environmental Assessment for Offshore Oil and Gas Activities

The Lebanese Minister of Energy and Water (MOEW) will publish soon an updated strategic environmental assessment report pertaining to the upstream oil and gas sector in offshore Lebanon, following an initial report published in 2012. The preparation of the updated report will be based on the recommendation of the Lebanese Petroleum Administration (LPA) and on extensive consultation with the Lebanese Ministry of Environment (MoE) to be in line with new environmental regulations.

Although, the SEA is a work in progress and regular updates are needed as a result of control and monitoring of impacts, assessment of new findings, inclusion of new regulations and formulation of improved recommendations and decisions, the first national trial was unsuccessful. The published SEA was partial, not in line with national regulations, and based on assumptions. Moreover, the process did not engage the general public. Therefore, in the context of the launching of the update process, a relevant quality control mechanism is needed for a more vigorous policy, environmental planning, and management of oil and gas activities.

The civil society/ general public including interested parties plays a major role in monitoring the SEA process, therefore a Quality Assurance Checklist is provided in this guidance report to help the civil community to monitor if the quality of SEA report is sufficient for decision making. Only a robust SEA process that includes extensive stakeholder consultations would enable the Lebanese government to understand environmental constraints, possible impacts, formulate mitigation measures, collect and disseminate the suitable information to stakeholders, acknowledge existing gaps in national regulation, and impose new measures on petroleum firms.

The checklist has been prepared with the purpose of ensuring compliance with the broad objective of the Lebanese SEA Decree No. 8213/2012, issued by the MoE. The checklist will also facilitate compliance with obligations placed on petroleum companies by the Offshore Petroleum Resources Law (OPRL).

Lebanon Updated SEA

The updated SEA must include a well-defined scope of the assessment, full description of planned activities, an up-graded baseline data (post 2012 assessments), a clear set of environmental indicators, methodology, goals, a thorough assessment of possible alternatives to be implemented, a revised regulatory and policy analysis matrix where all environmental decisions/decrees are considered, and clear guidance on Environmental Impact Assessments (EIAs) to be conducted (guiding the EIA process to manage potential effects).

Finally, the process should link the plan to the sector's official national strategy and include extensive stakeholder consultations in the SEA report development phase. The process must engage the civil society (general public including individuals) that would be able to provide comments to the responsible planning authority and SEA practitioners during public consultations.

Checklist Objectives

The proposed checklist is based on the SEA review checklist of MoE (decision No. 589/1 dated 2015), however, tailored for oil and gas activities and will highlight the issues that must be included in the new/updated SEA. In other words, the SEA's structure and stages must at least match with the SEA decree and must go beyond the decree (i.e. match the EC directives as well as practices in different leading countries regarding its extent, data gathering and analysis, and procedures regarding public involvement).

The checklist will allow the civil society to:

- Assess the adequacy of an SEA report after it has been published. In this case, the output of the checklist is an assessment that the information is either adequate or inadequate. If the information is inadequate the checklist prompts the user to identify what further information is required.

- Identify the statutory obligations in undertaking the SEA and in the preparation of environmental reporting in accordance with the terms of the SEA national legislation and generally accepted good practice in SEA (ensure that the process is fulfilling the requirements of the SEA decree prior to the publication of the SEA Report).

- Knowledgeably review the published SEA draft and provide comments to the draft SEA document (comments are expected to be collected and addressed by the SEA team, and can be integrated, when necessary).

Structure of the Checklist

The checklist provides quite a lengthy list of questions to be asked about the SEA process and/or SEA Report. It is divided into three review areas (as per Decision No. 589/1 dated 2015):

1. The Plan/Program and Alternatives

2. Identifying and evaluating plan/Program impacts

3. Mitigation, Monitoring and Integration

Within each section there are numbered subsections and questions. For some questions, notes are provided to assist the reviewer.

Instructions for Checking an SEA Report

- Step 1 Read the SEA Report to understand how it is organized and where to find things within it.

- Step 2 decide whether the particular information identified in the question is provided and is sufficient for decision-making. If it is complete, enter "Yes" in Column 2. If it is not, enter "No". In considering whether the information is of sufficient quality, the reviewer should consider whether there are any omissions in the information and, if there are, whether these omissions are vital to the Plan process.

- Step 3: If the answer to a question is "No" consider what further information is required and note this in Column 4 as well as any comments that will help to justify the judgments. The reviewer may also wish to make suggestions on where or how the information could be obtained.

Good quality SEA

A good SEA must be decision-relevant, integrated, transparent, participative, accountable, and cost effective:

1. **decision-relevant –** the SEA process should focus on the issues and information that matter in decision-making

2. **integrated –** the SEA process should include consideration of social, health and other effects as appropriate and necessary

3. **comprehensive scope –** the SEA process should cover all levels and types of decision-making likely to have significant environmental and health effects

4. **transparent –** the SEA process should have clear, easily understood requirements and procedures

5. **participative –** the SEA process should provide for an appropriate level of public information and involvement

6. **accountable –** the SEA process should be carried out justly, objectively and professionally having regard to the requirements in force and nationally, internationally accepted standards, and subject to independent oversight and review

7. **cost-effective –** the SEA process should achieve its objectives within limits of available policy, information, time and resources

The SEA should:

- Have a clear structure with a logical sequence, for example describing existing baseline conditions, predicted impacts (nature, extent and magnitude), scope for mitigation, agreed mitigation measures, and commitments to monitoring, significance of unavoidable/residual impacts for each environmental issue.
- Include clear and full description of the plan (concrete activities), its objectives and the measures within it.
- Include a description of the plan preparation and approval process and how SEA fits into this.
- Link the plan to the sector's official national strategy
- Include a full description of the proposed implementation of the Plan
- Includes a clear discussion of alternatives (In-depth analysis and evaluation of all alternatives)
- Assess environmental impacts of the chosen alternative
- Determine the environmental objectives of the plan/program of the relevant sector (area);
- Evaluation of different alternatives of the plan/program – determining how they contribute to achieving the environmental objectives related to the plan/program;
- Contain a good description of the methods used for the studies of each environmental issue.
- Cover each environmental issue/component in a way that is proportionate to its importance and at a level of detail that corresponds to the plan
- Provide evidence of consultation (including trans-boundary consultation)
- Include measures for monitoring and reducing the impacts of the selected alternative of the plan/program.
- Make a commitment to mitigation (with a program) and to monitoring.
- Have a non-technical summary that does not contain technical jargon.

Review Area 1: The Plan / Program & Alternatives

Section	*Yes*	*No*	*Remarks*
Objectives and context			
The plan's or programme's purpose and objectives are made clear.			
The plan's or programme's geographical scope and timescale are given			
SEA objectives[1], are clearly set out and linked to [2]targets and indicators[3]			
Environmental issues and constraints are considered in developing objectives and targets.			
Objectives are incorporated in the national, regional and local levels objectives			
Links with other related plans, programmes and policies are identified and explained.			
Inconsistencies between the plan or programme and environmental sustainability targets or with other plans/or programmes are identified and explained			

1

Objectives statement of what is intended, specifying a desired direction of change (i.e. ensure sustainability, improve biodiversity...)

2

Targets are more focused (i.e. Reduce GHG emissions by 50% before 2020)

3

Indicators are a measure of progress towards targets (i.e. % increase in renewable energy)

Section		Yes	No	Remarks
Scoping				
Has a scoping report been prepared?				
Did the scoping phase highlight key environmental resources, area of potential effect, alternatives, existing environmental issues and potential impacts of the plan/programme?				
Have the public and other interested bodies been identified and consulted at the scoping stage?				
Have the responses of the consultation meetings been integrated in the scoping report?				
Has the scoping report been published?				
Methodology				
A clear verifiable methodology is defined	Selection/analysis of scenarios			
	Selection/analysis of alternatives			
	Assessment of physical environment (seismicity, geology...)			
	Assessment of biological environment			
	Assessment of socioeconomic conditions			
	Impact assessment			
	Development of mitigation and monitoring measures			
	Public involvement			
	Contingency planning			

Section	Yes	No	Remarks
Technical, procedural and other difficulties encountered are discussed; assumptions and uncertainties are made explicit.			
Sources of information, including expert judgment, are identified and well explained			
Does this section include a description of the organization of the report?			
Alternatives			
Are the alternatives/scenarios identified realistic and reasonable[4]?			
Alternatives include “no action” or “business as usual” scenarios wherever relevant.			
Have the reasons for selecting (a) the alternatives and (b) the preferred alternative been provided?			
Has a description of how the assessment of alternatives was undertaken been provided?			
The environmental, social and economic impacts of each alternative are identified and compared			

4

Reasonable alternatives are ones which take into consideration the objectives and geographical scope of the plan/programme. Alternatives should be realistic, capable of implementation and should fall within the legal and geographical competence of the authority concerned.

Review Area 2: Identifying and Evaluating Plan/Program Impacts

Section		Yes	No	Remarks
Baseline Information				
General Requirements				
Clear description of the relevant aspects of the environment	Climate and air quality			
	Bathymetry			
	Hydrographic conditions			
	Water quality			
	Sediments types and quality			
	Ecosystems and Biodiversity			
	Seismology			
	Protected areas			
	Archeology & Cultural heritage			
	Socio-economic conditions			
The likely evolution (types or patterns) of the relevant baseline conditions without the plan or programme are described				
Environmental characteristics of the Area of Potential Effect (APE)[5] are described				
Clear indicators should be set for monitoring of the existing conditions				

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"The geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist"

Section		Yes	No	Remarks
Defined indicators are simple and respond to predicted significant impacts				
Information gaps are identified				
Spatial baseline data is presented in maps or graphic forms where the distribution of environmental characteristics or problems geographically is realized				
Specific Requirements				
Physical Environment				
Bathymetry	Sources of data are listed			
	Bathymetry characteristics for each block are summarized			
	Average, minimum and maximum depths for each block are present			
	Bathymetry contours in the EEZ are illustrated			
	Results of the bathymetric surveys are analyzed and linked to the study objectives			
Hydrography	Have modelling exercises been performed to assess the local hydrography conditions? (Hydrographic surveying)			
	Methodology for currents and wave metering is present			
	Characteristics of wave conditions are presented			
	Description of speed and direction of currents is included			
	Have the seasonal variations been captured in the assessment?			

Section			Yes	No	Remarks
Air Quality	Baseline emissions inventory is present				
	Baseline emissions inventory includes:	Meteorological datasets used are explicit			
		Sources of emissions are identified			
		Spatial-temporal distribution of air pollutant sources is done			
		Types of emissions include: o Criteria pollutants[6] o GHG emissions[7] o Hazardous air pollutants			
Acoustic Environment	Assessment of airborne and waterborne noise emission sources (shipping, inland sources...)				
	Description of baseline noise propagation features, taking into account existing local conditions (bathymetry and composition, stratigraphy...)				

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Criteria pollutants: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM), and sulfur dioxide (SO_2)

7

Greenhouse Gases (GHGs): carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs); hydrogen sulfide (H_2S); and ammonia (NH_3)

Section			Yes	No	Remarks
Sea Water Quality	Sources of sea water pollution are identified and mapped				
	Sea water quality is assessed, the following baseline levels of pollutants is documented	pH			
		Temperature			
		Salinity			
		Color			
		Turbidity			
		Suspended solids			
		BOD			
		Nutrients			
		Dissolved Oxygen (DO)			
		DO within 2m of seabed			
	Seasonal variations were accounted for				
	Assessment methodology is clear				
	If sampling was conducted, clear explanation of sampling methodology (date, time, methods followed, location, depth of sampling...) is provided				
Sediments	Sampling of sediments is conducted				
	Sedimentological properties are assessed (physical properties, grain size...)				
	Sediments quality is analyzed (TOC, trace metals, mercury...)				
	Clear explanation of sampling methodology (date, time, methods followed, location, depth of sampling...)				

Section	Yes	No	Remarks
Biological Environment			
Are the relevant aspects of the current state of Biodiversity described? • Ecosystem integrity; • Ecosystem goods and services; • Status and trends of the components of biological diversity: Trends in extent of selected habitats (coastal and marine), trends in abundance and distribution of selected species, coverage of protected areas, (change in status of threatened species, trends in fish species of major socioeconomic importance)			
Has the SEA report included the following assessments? **(Species richness, % cover, range of distribution, population abundance, species present, invasive species, temporal variation, threats)**	Assessment of Marine plankton, including both phytoplankton[8] and zooplankton[9] Marine plankton, found in all ocean ecosystems, play a critical role in maintaining the health and balance of the ocean and its complex food webs.		
	Assessment of Benthos[10] (Benthic communities, phytobenthos (benthic flora) and Zoobenthos (benthic fauna) that are found on, in or near the seabed (at the bottom of the water, bottom dwellers)– ecological indicators of environmental health		

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Phytoplankton are the tiny, plant-like producers of the plankton community. They include bacteria and algae that form the base of aquatic food webs.

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Zooplankton are the animal-like primary consumers of plankton communities. In turn, zooplankton then become food for larger, secondary consumers such as fish. Zooplankton include as copepods, krill, and arrow worm, oysters, crabs, and some fish)

10

Benthos plays a significant role as substrate, refuge from predation and food for a wide variety of fish and invertebrates of all life stages and should therefore be considered in the ecosystem approach to management.

Section		Yes	No	Remarks
	Assessment of Nekton, nekton are actively-swimming organisms that swim against the water currents. This group includes bony fish, whales, sharks, turtles, snakes, eels, porpoises, dolphins and seals. Molluscan nekton are animals like octopus and squid. Arthropod nekton are animals like shrimp			
	Assessment of Marine birds or sea birds, with particular attention to those species specifically noted in the Barcelona Convention Action Plan for Sea Birds (Status, feeding, habitat, migration, and breeding process (period, location)			
	Assessment of marine mammals, sea turtles (nesting, migration, feeding), and other protected or endangered species (listed by IUCN[11])			
	Areas of special concern such as Marine Protected Areas (MPAs) (status, importance, threats), including coastal sites			

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IUCN Red List of Threatened Species is the world's most comprehensive inventory of the global conservation status of plant and animal species. It uses a set of criteria to evaluate the extinction risk of thousands of species and subspecies.

Section	Yes	No	Remarks
Have depth surveys been conducted at the sites?			
Sampling and collection of data accounted for seasonal variations			
Have any significant gaps in the baseline data been identified			
What alternative/proxy data sources have been identified/used where existing baseline data is unavailable?			
Have protected areas or species been reported in the concerned study area?			
Has the report defined any exclusion areas (where activities are banned because of the sensitivity of the site?)			
Sensitive or critical areas with high biodiversity may include those that act as a (1) corridor, (2) link-habitat, (3) a buffer or play an important part in maintaining environmental quality or critical ecosystem processes, (4) have important seasonal uses or are (5) critical for migration, (6) support habitats, species populations, ecosystems that are vulnerable and threatened throughout their range and slow to recover.			
Have all relevant biodiversity interests and values (including economic, social...) been identified?			
Has the SEA produced habitat distribution maps for the study area			
Have references and scaled map illustrating the geographical extent of the assessed area been included in the report?			
Have any biodiversity conservation objectives at national level which are relevant been identified?			

Section	Yes	No	Remarks
Has the SEA accounted of Lebanon's National Biodiversity Strategy and Action plan, Lebanon's Marine Protected Areas Strategy[12], and International Conventions in relation to marine ecosystems (Barcelona convention and its Specially Protected Areas and biodiversity protocol), and reviewed the extent to which the plan is consistent with these?			
Were the key existing problems for biodiversity identified (negatives trends in biodiversity over time, aspects of biodiversity that are worse than relevant standards, issues where there are not enough data to be able to judge the likely significance of future impacts)			
If key problems for biodiversity have been identified during baseline assessment, has the report provided ways of ameliorating the problems?			
Socio-economic Conditions			
Population and Demographics • Population number and annual growth rate • Population composition (nationality, gender, age etc.) • Population spatial distribution • Population density in the coastal region • Levels of education			

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The Lebanese Strategy aimed to create a national network of marine protected areas, in order to fulfill Lebanon's commitments towards the Convention on Biological Diversity (CBD) and to specifically contribute to the achievement of the CBD Aichi marine target, aiming at the protection of at least of 10% of marine eco-regions in the world by 2020

Section	Yes	No	Remarks
Employment and unemployment • Employment rates per sector or activity • Unemployment rate (per gender, age etc.) • Changes in employment and unemployment rates • Assessment of employment or unemployment features per region (economic statues, financial and educational status, migration of residents, depopulation of areas etc.) • Assessment of foreign labor employment specifically in the coastal region and their effect on the employment rate of local workforce • Assessment of expected increase of employment rate due to the expansion of the offshore oil and gas sector			
Poverty • Assessment of poverty rate • Number of population below the poverty line • Effect of this sector on poverty reduction			
Economy • Per capita GDP growth rate • GDP per economic activity • Assessment of the coastal economic activities • Assessment of fishing activities (commercial fish and fisheries, fishing routes) • Assessment of the number of local labor working in oil and gas sector (companies, services etc.)			
Education • Assessment of number of public and private schools (primary and high school) • Number of students attending school (primary and high school) • Number of universities and their corresponding faculties • Assessment of the number of students graduating with relevant degrees in the oil and gas sector that would meet the future labor market need			

Section		Yes	No	Remarks
Tourism • Assessment of job opportunities and increase in income due to tourism • Assessment of the number of tourists arriving in the coastal region • Assessing whether or not tourism adversely affects landscape, visual resources and biodiversity • Sustainable management of tourism				
Availability of infrastructure	Transportation infrastructure (road, airway, and marine transportation)			
	Laboratory facilities (for sampling, testing and analysis)			
	Waste management facilities, including hazardous waste treatment infrastructure			
	Wastewater treatment plants			
	Gas management facilities			
	Equipment for emergency response action			
Archeological and cultural heritage				
Studies of registered archeological monuments and cultural heritage in the project area (number of cultural monuments that are of great significance either locally or regionally) were reviewed				
Current status of offshore archeological and cultural monuments, whether or not these are protected, ruined or well preserved are discussed				
Assessment of underwater archeological and cultural heritage resources				

Section	Yes	No	Remarks
IDENTIFICATION & EVALUATION OF KEY IMPACTS			
General Requirements			
Impacts evaluation must be compatible with the sector's strategic plan			
The likely significant impacts on biodiversity, flora, fauna, human health, soil, water, air, climate factors, acoustic environment, material assets, cultural heritage, landscape and their interrelations are identified and evaluated.			
Social and socio-economic impacts of project activities are assessed			
Impacts are evaluated and graded according to nature, magnitude, extent, timing, duration, reversibility, likelihood of occurrence and significant.			
Methodology for impacts evaluation is clear			
Both positive and negative effects are considered, and the duration of effects (short, medium or long-term) is addressed.			
Likely secondary, cumulative[13] and synergistic impacts[14] are identified where practicable.			

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defined as effects on the environment which are caused by the combined results of past, current and future activities

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Secondary effects *are effects that are not a direct result of the plan, program or strategy (PPS) but occur away from the original effect or because of a complex pathway.* **Cumulative effects** *arise, for instance, where several developments each have insignificant effects but together have a significant effect, or where several individual effects of the PPS have a combined effect.* **Synergistic effects** *interact to produce a total effect greater than the sum of the individual effects, so that the nature of the final impact is different to the nature of the individual impacts.*

Section	Yes	No	Remarks
Causes, pathways and consequences of impacts are analyzed for the systematic procedure of cumulative impact assessment[15]			
Inter-relationships between impacts are considered where practicable.			
Key receptors which may be subject to cumulative effects are identified			
Impacts are assessed over a larger area than the plan area (Area of Potential effect is defined)			
Impacts on valued resources due to the interaction of the plan and other plans and actions are considered			
Impacts are assessed over a long period of time, including the past and the future			
Quantification of impacts was done, whenever possible			
Potential for transboundary impacts, based on the impact factors for each phase of hydrocarbon activities, are evaluated			
Uncertainties in predicting impacts and determining significance are recognized and the reasons for uncertainties are explicitly explained			
Due to the uncertainties in assessing and predicting cumulative impacts, the precautionary principle is adopted			
The prediction and evaluation of effects makes use of relevant accepted standards, regulations, and thresholds.			

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Causes: *activities that cause potential impacts or environmental change;* **Processes:** *pathways of impacts between the sources and receptors and the linkages among these impacts;* **Impacts:** *analysis of the attributes of these effects - whether such impacts are additive, antagonistic or synergistic.*

Section		Yes	No	Remarks
Impacts of the following project phases were assessed	**Prospection and Exploration**			
	Impacts of the physical presence of the drill and the support vessel			
	Impacts on seafloor disturbance			
	Development and production			
	Installation of subsea pipelines			
	Gas treatment plant			
	Junction point with export pipelines			
	Pipelines on land			
	Impacts on physical appearance			
	Impacts on hydrocarbon usage			
	Impacts on crude oil storage and export			
	Impacts on facility and pipelines installation			
	Others...			
	Decommissioning			
Specific Requirements				
Main sources of continuous and intermittent emissions are identified				
Type of pollutants/ components of air emissions are evaluated				
Emissions inventory, including baseline inventory and projected emissions, is set.				

Section	Yes	No	Remarks
Sources of wastewater (produced water, cooling water, desalination brine, ballast…)			
Quality of wastewater produced and associated impacts			
Names and types of major chemicals/chemical inventory is present			
Sources of hazardous and nonhazardous waste are anticipated			
When developing spatial risk assessments, acoustic mapping is combined with habitat mapping of sound-sensitive species to identify areas where those species may be exposed to noise impact			
Biodiversity components that are particularly vulnerable/sensitive to proposed plan activities are identified (State of vulnerability of habitats in relation to identified disturbances and effects (habitat vulnerability indexes/ depending on disturbance)			
All type of impacts on biodiversity are assessed including physical disturbance, noise pollution, light pollution, chemical effects…etc.			
Oil-spill modeling scenarios are used in impact identification and analysis			

Review Area 3: Mitigation, Monitoring & Integration

Section	Yes	No	Remarks
MITIGATION			
Measures envisaged to prevent, reduce and offset any significant adverse effects of implementing the plan or programme are indicated.			
Mitigation measures for cumulative impacts are proposed and enhancement measures for valued resources are suggested			
Mitigation measures are clearly described, and their impact on the magnitude and significance of impacts is clearly explained			
Mitigation measures are concretely linked to proposed activities of the plan			
Mitigation measures are cross-referenced to the project design and operating procedures which elaborate on the technical aspects of implementing these measures			
Mitigation measures are described with reference to the conditions under which it is required (i.e. continuously or in the event of contingencies)			
Reasons for choosing the proposed mitigation measures are explained			
Significance of residual impacts after mitigation are assessed			
Thresholds for acceptable cumulative impacts are established			
Waste management/disposal methods alternatives are assessed and compared according to environmental grounds, including necessary infrastructure			

Section	Yes	No	Remarks
Uncertainties are recognized and the reasons for uncertainties are explicitly explained			
Costs and responsibilities for implementation of mitigation measures are clearly defined			
Binding commitments to implement the proposed mitigation measures are mentioned, when available.			
Outline of the overall management structure for the environmental management plan is present			
Regulation, standards and policies, at the national and international level, governing environmental quality, health, safety and protection of sensitive areas are explained			
Management measures and emergency response actions are proposed for oil spills, natural disasters, fires, blow outs, hydrogen sulfide and other gaseous emissions			
Special considerations were provided of additional enhanced measures for activities planned in proximity to critical habitat			
Biodiversity indicators[16] were set to predict significant impacts to reach conservation goals (protect endangered and rich habitats, protect sensitive coastal habitats, sea mammals, turtles, and seabirds, and avoid the introduction of invasive species).			
A detailed emergency oil spill response plan is developed to address spill prevention and response, including routine spill response exercises			

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Possible SEA indicators that can be present in the SEA to ensure the implementation of effective policies:

- *Reported levels of damage to designated sites/species*
- *Achievement of Biodiversity Action Plan targets*
- *Reported condition of nationally important wildlife sites, and sites of special concerns (Specially Protected Areas of Mediterranean (SPAMI)), protected marine areas (deep, estuary, and coastal areas), sites in need of protection, and nature reserves.*
- *Number/Area of local nature reserves and protected sites*

Section		Yes	No	Remarks
Engineering design and protocols are developed to prevent spills from reaching the marine environment including secondary containment, inspection and maintenance, spill response kits, and blowout safeguards.				
The environmental management plan includes schedule of actions to be taken				
The environmental management plan includes programme for surveillance, monitoring and auditing				
The environmental management plan includes contingency plans				
MONITORING				
Measures proposed for monitoring are clear, practicable and linked to the indicators and objectives used in the SEA				
Monitoring measures considered both adverse and beneficial effects				
Measures are proposed to monitor:	Objectives, targets and indicators that were developed for the SEA			
	Features of the environmental baseline that will indicate the effects of the plan or Programme			
	Significant impacts that were identified during the effects assessment			
	Mitigation measures that were proposed to offset or reduce significant adverse impacts			
Monitoring programme includes:	Monitoring activity to be undertaken			
	Responsibility for undertaking the monitoring			
	When the monitoring needs to be carried out (dates and frequency)			

Section	Yes	No	Remarks
How results should be presented and in what format			
Status of monitoring and any problems encountered			
Cost of monitoring			
Have authorities/stakeholders (such as professional organizations, public administrations and syndicates) been consulted regarding the scope of the SEA			
Has the report included the view of key stakeholders and those responsible for developing the plan on the different elements of the SEA			
Has the report developed a stakeholder engagement and public consultation methodology/plan?			
If the stakeholder engagement and public consultation plan was developed: • Has the plan defined stakeholders (including teams) • Has the plan defined stakeholder engagement phases and activities? • Has the plan defined stakeholder engagement tools and materials (note formats, commitment, reporting process) • Was there an effort to involve less powerful stakeholders in the consultation process? • Does the plan state clearly that opinions to be expressed by the designed authorities and the public during the consultation meeting will be taking into account during the preparation of the plan			

Section	Yes	No	Remarks
As part of the stakeholder engagement programme, have the designated stakeholders been given an outline of: • the geographical area involved (including a referenced and scaled map of the area) • the nature of the plan and its intended lifespan • the likely scale, nature and location of development within the area during the life of the plan (in broad terms) • the predicted significant effects of this development			
If the zone of influence of the plan extends beyond the plan boundary have relevant statutory bodies and adjoining local authorities been informed and consulted?			

OVERALL APPRAISAL OF THE SEA REPORT

No.	Topic	Adequately Addressed?	Comment and any requirements for further information
1.	Description of the plan/programme and baseline conditions		
2.	Consideration of alternatives		
3.	Description of environment likely to be affected by the plan/programme		
4.	Description of the likely significant effects of the plan/programme		
5.	Description of mitigation		
6.	Description of monitoring		
7.	Non-Technical Summary		
8.	Quality of presentation		
Overall Assessment:			
Comment:			

Lebanese Oil & Gas Initiative

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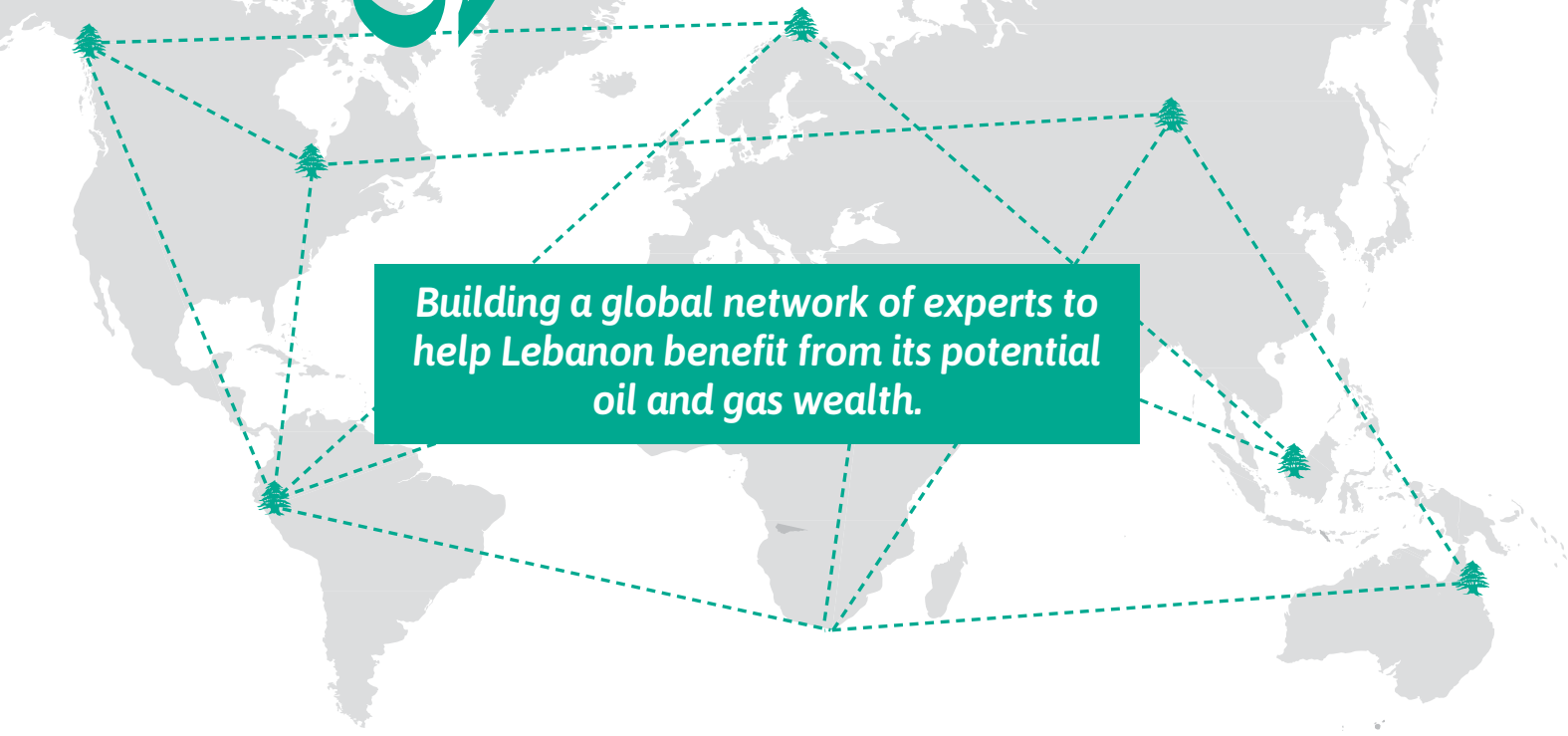

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