TERMS AND SCOPE FOR THE

ENVIRONMENTAL IMPACT ASSESSMENT (EIA):

HAMMERHEAD DEVELOPMENT

PROJECT STABROEK BLOCK,

OFFSHORE GUYANA.

January 03, 2025

PREAMBLE

The Terms and Scope herein is being developed to guide the preparation of the Environmental Impact Assessment (EIA) for the Hammerhead Development Project.

The Terms and Scope was prepared by the Environmental Protection Agency (EPA) in consultation with Environmental Resources Management (the Consultant) which has been approved by the EPA to undertake the EIA for the above stated Project.

In accordance with the Environmental Protection Act Cap 20:05, the EPA published a notice of the Project on 14 July 2024 and made available to members of the public a summary of the proposed Project. The public had 28 days to make written submissions setting out those questions and matters which they require to be answered or considered in the EIA. The Terms and Scope herein was developed following this public notification period and sets out the requirements, both general and specific, that the Consultants should address in the conduct of the EIA.

CONTENTS

1. INTRODUCTION

The Environmental Protection Agency (EPA) received from Esso Exploration and Production Guyana Limited (EEPGL or the Developer) an Application for Environmental Authorisation for the Hammerhead Development Project situated in the Stabroek Block, Offshore Guyana. The application was made in accordance with Section 11(1) of the Environmental Protection Act Cap 20:05 (EP Act Cap.20:05) and was accompanied by a Project Summary with information on:

- The proposed site, design, size and duration;
- The possible effects on the environment; and
- A non-technical explanation.

The EPA conducted a review of the application and determined, in accordance with Part IV 11 (2) (b) of the EP Act Cap.20:05 that the Project may significantly affect the environment and will require an Environmental Impact Assessment (EIA). The EPA, consequently, and in accordance with Part IV 11 (6), of the EP Act Cap.20:05, published, at EEPGL's expense, in a daily newspaper, a notice of the Project and made available to members of the public the aforementioned Project Summary.

In accordance with Part IV 11 (4) of the EP Act Cap.20:05, this EIA will be carried out by independent and suitably qualified persons. Environmental Resources Management (the Consultant) was approved by the EPA as the Consultant to conduct the EIA.

This Terms and Scope guides the preparation of the EIA. While Section 11 of the Act specifies "EIA", this Terms and Scope seeks to include social and economic components in keeping with the Guyana Environmental Protection Act (as amended in 2005), the Environmental Protection (Authorisation) Regulations (2000), the Environmental Impact Assessment Guidelines—Volume 1, Version 5 (EPA 2004), the Environmental Impact Assessment Guidelines—Volume 2, Version 4 (EPA/EAB 2000), other applicable Guyana regulations, international good practice, EEPGL's corporate standards, and in accordance with the Consultants' standard practices.

2. BACKGROUND INFORMATION

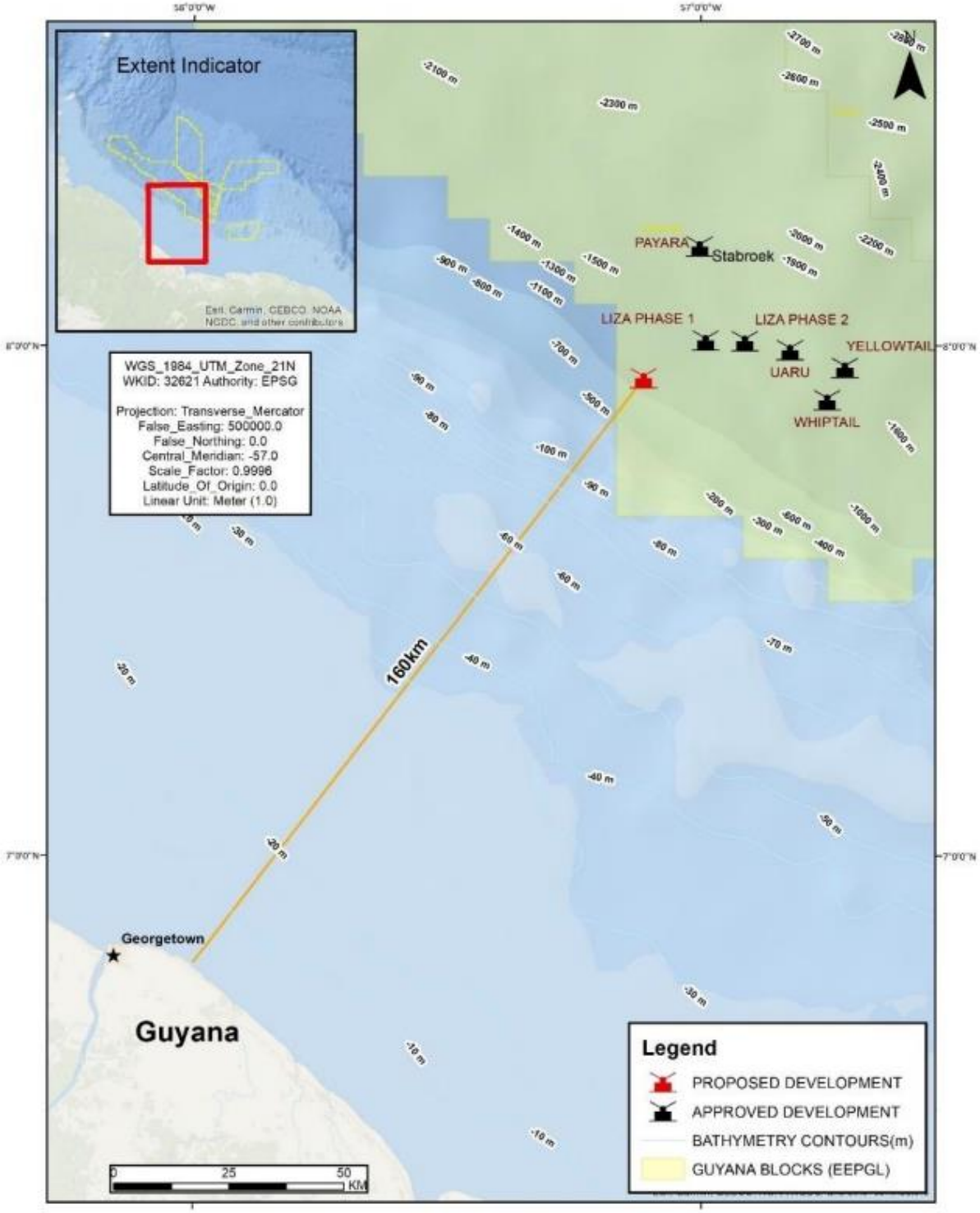
EEPGL is seeking Environmental Authorisation for a proposed seventh deep water petroleum development project in the south-central portion of the Stabroek Block, approximately 160km from Georgetown and amid previous Stabroek Projects. Hereafter referred to as the Hammerhead Development Project, or the Project unlike previous projects will be a stand-alone project. EEPGL is the designated Operator of the Stabroek Block and seeks authorisation for the Project on behalf of itself and co-venturers: Hess Guyana Exploration Limited and China National Offshore Oil Corporation (CNOOC) Petroleum Guyana Limited. The information below provides an overview based on the Project Summary included in the Application for Environmental Authorisation. The Project is currently in the early stages of design and will be optimized through the engineering process. The Project information presented in this section is based on conceptual design and will be further defined as the EIA progresses.

The Project will consist of drilling approximately 14 to 30 production and injection wells (including production, water injection, and gas re-injection wells); installation and operation of Subsea Umbilicals, Risers, and Flowlines (SURF) equipment; the installation and operation of a Floating, Production, Storage and Offloading (FPSO) vessel – inclusive of handling and offloading of produced hydrocarbon; and ultimately, decommissioning. Onshore logistical support facilities (such as shorebases, warehouses, storage and pipe yards, fabrication facilities, fuel supply facilities, and waste management facilities); and marine/aviation services will be used to support each stage of the Project.

There will be components of the Project located on the seafloor, in the water column, and at the ocean surface. The combined extent of the area affected by both surface and subsea components and activities is referred to as the Project Development Area (PDA). Figure 1 illustrates the location of the PDA within the Stabroek Block; the PDA is located approximately 160 kilometres southern of the coastline of Georgetown, Guyana.

The exact locations of the Hammerhead Development wells have not yet been finalised; however, the wells are anticipated to be drilled similar to the process followed during exploration/appraisal well campaigns as well as the Liza Phase 1, Liza Phase 2, Payara, Yellowtail, Uaru and Whiptail drilling programs. After drilling to total depth, the wells will be completed, and the subsea production equipment will be installed.

Figure 1: Location of the Hammerhead Project Development Area within the Stabroek Block.



Note: Locations on figure subject to change

3. DESCRIPTION OF THE PROJECT

As noted previously, the Project is currently in the early stages of the engineering design process. The Project Description chapter of the EIA will be based on the optimized design and will include (but not be limited to) the aspects listed below. Section 5.7 herein includes additional requirements needed to describe the Project with sufficient detail to assess the potential environmental and social impacts that may result from the construction and operation of the Project.

a. The Project design including identification and detailed description of all components of the Project, including crude lifting, fuel bunkering and other ancillary services in accordance with the EP Act Cap.20:05.

b. Historical and current state of exploration; and developmental and production operations/activities.

c. Detailed process description of all construction and operational phases (i.e., development drilling; marine installation, hook-up, commissioning, and start-up; production operations; crude oil storage and offloading; and decommissioning – inclusive of well plugging and abandonment) of the proposed Project.

d. Description of proposed best available techniques, which consider economic and technical feasibility as well as facilities and controls to prevent or mitigate pollution from all components and processes related to construction, installation, testing, start-up, unplanned events, operations etc.

e. Discussion/description of the proposed Project in relation to existing and/or other planned/proposed projects or activities in the Project area.

f. Identification of staffing, support facilities and services that would be required during the different phases of the activity.

g. Identification of storage containers; barrels, drums, totes etc. and other similar items that can be reused, through sterilisation and those that need to be disposed.

4. SCOPE OF THE EIA

In accordance with Part IV (11) (5) of the EP Act Cap.20:05, every EIA shall contain the following information:

a) A detailed description of the Project, including but not limited to:

i. The geographical area involved, the physical characteristics of the whole Project and the area requirements during the installation and operational phases, including plans and drawings;
ii. The characteristics of the installation and the production process, including the nature and quantity of the materials used, plans, and drawings;
iii. An estimate, by type and quantity (or concentrations, as appropriate), of expected contaminants, residues and emissions (water, air and soil pollution, noise, vibration, light, heat, radiation) resulting from the operation of the proposed Project;
iv. The length of time of the Project; and
v. Details outlined in Section 5.7 of the Terms and Scope.

b) An outline of the main alternatives studied by the Developer and an indication of the main reasons for the Developer's choice, taking into account the environmental factors;

c) Direct, indirect and cumulative impacts/effects of the proposed Project on the environment including but not limited to impacts on:

i. Human beings;
ii. Flora and fauna and species habitats;
iii. Water;
iv. Marine soil;
v. Air and climatic factors;
vi. Material assets, the cultural heritage and the seascape;
vii. Natural resources, including how much of a particular resource is degraded or eliminated, and how quickly the natural system may deteriorate;
viii. The ecological balance and ecosystems;
ix. The interaction between the factors listed above;
x. Any other environmental factor which needs to be taken into account or which the Agency may reasonably require to be included; and
xi. In accordance with Part IV, 11 (4) (b) of the EP Act Cap.20:05, the EIA must assess the Project with a view to the need to protect and improve human health and living conditions and the need to preserve the stability of ecosystems as well as the diversity of species.

d) An indication of any difficulties (technical deficiencies or lack of knowledge or expertise) encountered by the Developer in compiling the required information;

e) A description of the best available technology;

f) A description of any hazards or dangers which may arise from the Project and an assessment of the risk to the environment;

g) A description of the measures which the proposed Developer intends to use to mitigate any adverse effects and a statement of reasonable alternatives (if any) and reasons for their rejection;

h) A statement of the degree of irreversible damage, and an explanation of how it is assessed;

i) An Oil Spill Response Plan for containing and cleaning up any pollution or spill of any contaminant;

j) The Developer's programme for rehabilitation and restoration of the environment; and

k) A non-technical summary of the information provided under the preceding paragraphs.

5. REQUIREMENT FOR THE ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL IMPACT STATEMENT

5.1. ORGANISATION OF THE REPORT (ENVIRONMENTAL IMPACT ASSESSMENT)

The EIA Report shall focus on significant environmental issues and must provide all the relevant information needed by the EPA to consider fully any adverse or beneficial impacts of the proposal. Where not covered by Guyanese laws or regulations, relevant international standards and guidelines such as but not limited to World Bank, International Maritime Organization (IMO), International Convention for the Prevention of Pollution by Ships, 1973, as modified by the Protocol of 1978 (MARPOL 73/78), and World Health Organization must be referenced in the EIA in discussions pertaining to operating and environmental practices.

The introduction to the EIA shall provide an explanation of the scope of the proposal and the issues and decisions which led to the proposal at this time and in this context, including a history of events leading up to Project formulation, envisaged time scale for implementation and Project life, anticipated establishment costs and actions already taken at the Project site.

Values represented in Tables and Figures (or any other format of data presentation) in the EIA report must be a reflection of the titles given. Any assumptions associated with those values must be clearly stated underneath the tables.

The EIA Consultants and EEPGL shall ensure that all aspects contained in the suggested table of contents outlined below are addressed and integrated into the EIA Report, including integration of mitigation and monitoring measures for each medium/receptor.

A detailed concordance analysis of the EIA contents shall be included in the report; this will include a table to demonstrate alignment between the EIA and this Terms and Scope.

Citations of good practice shall include jurisdiction in which the practice is commonly used and justification for use in the context of this EIA.

Table 1: Proposed Table of Contents for the Hammerhead EIA

Volume I – Introduction, Project Description and Baseline

Environmental Impact Statement (Executive Summary)

Abbreviations/Units, Acronyms and Glossary

1. Introduction
2. Description of the Proposed Project
3. Administrative Framework
4. EIA Process, Approach and Methodology
5. Stakeholder Engagement
6. Scope of the EIA
7. Environmental Baseline - Physical Resources
8. Environmental Baseline - Offshore and Nearshore Biological Resources
9. Social Baseline - Socioeconomic and Community Health Conditions

Volume II – Impact Assessment, Management, Implementation and Conclusions

1. Identification of Potential Impacts
2. Impact Assessment and Mitigation - Physical Resources
3. Impact Assessment and Mitigation - Offshore and Nearshore Biological Resources
4. Impact Assessment and Mitigation - Socioeconomic and Community Health Conditions
5. Impact Assessment and Mitigation - Unplanned Events
6. Impact Assessment and Mitigation - Cumulative Impacts
7. Environmental and Social Management Plan Framework
8. Conclusions and Summary of Impacts
9. Recommendations
10. Project Team
11. References

Volume III – Appendices

1. Modelling Reports (Oil Spill, Air Quality, Water Quality, Underwater Noise)
2. All relevant documentation supporting the EIA (including supporting reports, summary records of consultations, data collection/survey forms etc.)
3. Commitments Register outlining all commitments defined/stated in the EIA inclusive of timelines, roles and responsibilities.
4. Approved Terms and Scope for the Hammerhead Development Project
5. Curricula vitae for EIA Team

Volume IV – Plans

1. Environmental and Socioeconomic Monitoring and Management Plan
2. Stakeholder Engagement Plan for Guyana Operations
3. Preliminary Decommissioning Plan
4. Oil Spill Response Plan for Guyana Operations
5. Comprehensive Waste Management Plan

An overview of the information to be included in EIA chapters is provided below.

Volume I: Introduction, Project Description and Baseline

Environmental Impact Statement (Executive Summary)

Abbreviations/Units, Acronyms and Glossary

Chapter 1: Introduction
1. Purpose of the EIA
2. Goal and Objectives of the EIA
3. Components of the EIA

Chapter 2: Description of the Proposed Project
1. Project Area
2. Project Schedule
3. Project Workforce
4. Development Concept
5. Alternatives Analysis
6. Description of Key Project Components/Activities

Chapter 3: Administrative (Legislative and Regulatory) Framework
1. Guyana Legal and Regulatory Framework
2. International Conventions
3. Good International Industry Practice
4. EEPGL Company Policy

Chapter 4: EIA Process, Approach and Methodology
1. Overview of the EIA Process
    - Screening
    - Scoping
    - Impact Assessment
2. Impact Assessment Methodology
    - Assessment of Existing Conditions
    - Interaction with Design and Decision-Making Process
    - Stakeholder Engagement (including stakeholder mapping and engagement plan with records/minutes/etc. presented in appendices)
    - Assessment of Impacts
    - Identification of Mitigation Measures
3. Significance Criteria

Chapter 5: Stakeholder Engagement

Chapter 6: Scope of the EIA

1. The Area of Influence
2. Resources and Receptors Assessed in the EIA

Chapter 7: Environmental Baseline - Physical Resources

1. Geographic Setting
2. Climate and Climate Change
3. Air Quality
4. Sound/Noise
5. Marine Geology and Sediments
6. Marine Water Quality

Chapter 8: Environmental Baseline - Offshore and Nearshore Biological Resources

1. Protected Areas and Special Status Species
2. Coastal Habitats
3. Coastal Wildlife
4. Marine Benthic Habitats
5. Marine Benthos (flora/fauna)
6. Marine Birds
7. Marine Mammals
8. Riverine Mammals
9. Marine Turtles
10. Marine Fish
11. Ecosystem Structure and Function
12. Biodiversity

Chapter 9: Social Baseline - Socioeconomic and Community Health Conditions

1. Socioeconomic Conditions, Employment, and Livelihoods (including gender, economic activity, population, and use of land and marine environment)
2. Community Health and Wellbeing
3. Transportation (including offshore transportation)
4. Waste Management and Infrastructure
5. Social Infrastructure and Services (including housing, community services, onshore transportation/traffic and waste management infrastructure and capacity)
6. Cultural Heritage
7. Land Use
8. Ecosystem Services (including analysis of previous environmental sensitivity studies for the coastal regions)
9. Indigenous People

Volume II: Impact Assessment, Management, Implementation and Conclusions

Chapter 10: Identification of Potential Impacts

1. Impact Identification
2. Uncertainties and Gaps in the Information

Chapter 11: Impact Assessment and Mitigation - Physical Resources

1. Prediction and Assessment of Impacts
2. Mitigation and Monitoring Measures

Chapter 12: Impact Assessment and Mitigation - Offshore and Nearshore Biological Resources

1. Prediction and Assessment of Impacts
2. Mitigation and Monitoring Measures

Chapter 13: Impact Assessment and Mitigation - Socioeconomic and Community Health Conditions

1. Prediction and Assessment of Impacts
2. Mitigation and Monitoring Measures

Chapter 14: Impact Assessment and Mitigation - Unplanned Events

1. Types of Potential Unplanned Events including release during chemical bunkering, fuel bunkering, drilling mud bunkering, underwater release from choke valve from SURF, and release of off-spec produced water.
2. Resource/Receptor- Specific Impact Assessments Impacts
3. Transboundary Impacts

Chapter 15: Impact Assessment and Mitigation - Cumulative Impacts

1. Objectives and Scope
2. Methodology
3. Other Projects and External Drivers
4. Valued Environmental Components Selection and Description
5. Prediction and Assessment of Impacts
6. Cumulative Impact Management Framework

Chapter 16: Environmental and Social Management Plan Framework

1. Regulatory and Policy Framework
2. Environmental and Social Management Plan Structure
3. General ESMP Guiding Principles
4. Management Plan Contents
5. Monitoring, Reporting and Verification Framework
6. Management of Change

Chapter 17: Conclusions and Summary of Impacts

1. Planned Project Activities
2. Unplanned Events
3. Cumulative Impacts
4. Degree of Irreversible Damage
5. Summary of Residual Impacts
6. Project Benefits

Chapter 18: Recommendations

1. Embedded Controls
2. Proposed Mitigation

Chapter 19: References

Volume III: Appendices

1. Modelling Reports (Oil Spill, Air Quality, Water Quality, Underwater Noise)
2. All relevant documentation supporting the EIA (including supporting reports, summary records of consultations, data collection/survey forms etc.)
3. Commitments Register outlining all commitments defined/stated in the EIA inclusive of timelines, roles and responsibilities.
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1. Environmental and Socioeconomic Monitoring and Management Plan
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5.2. STUDY AREA/AREA OF INFLUENCE

The study area/area of influence (AOI) for the purposes of this EIA is initially demarcated by the Stabroek Block, Offshore, Guyana as well as the transit corridor for Project-related marine vessels and helicopters moving between the Stabroek Block and Georgetown. It is expected that the EIA will determine and delineate the actual AOI by considering the extent of direct and indirect interactions between the proposed Project and the physical, biological and social environments. The AOI will include the areal extent of the proposed development area. Offshore facilities/operations that can be impacted by the Project also need to be considered in defining the AOI.

Specific Project Location

The description of the Project location will include overall positioning of the FPSO and subsea facilities and other support facilities; an indication of the proposed components in relation to one another and surrounding areas, boundaries, buffer zones/ setback distances, fishing and transportation routes; relationship to other offshore activities in the area; and clear definition of the boundaries within which the activity is intended to occur.

Mapping and Use of Geographical Information System

Mapping, as referred to in this Terms and Scope, shall be considered to be spatial data to scale, represented in digital or printed format. Mapping should be illustrated with the use of photographs, map sheets and diagrams at easily understood and appropriate scales to illustrate the spatial extent of the Project and the impact area. Printed maps of the site area shall clearly indicate the layout of the facilities in the context of the immediate site, as well as relative to the wider study area. Each printed map shall be at appropriate/easily understood scales for the overview being illustrated (e.g., 1:10 000 or 1:5000 for site plans) and shall be inserted at the point of reference in the text in the EIA. In the event that any of the maps are large and/or bulky, these should be incorporated into one of the appendices, as appropriate. All maps and figures shall adhere to the following guidelines:

1. Spatial data shall be appropriately scaled;
2. Map/figures shall be clearly legible and include proper legends/keys;
3. Maps/figures shall be dated and the source of the datum stated; and
4. Maps/figures shall include an appropriate scale and a north arrow.

The use of scanned documents, texts or graphics is not preferred. All documents or content that is reproduced from existing sources will be clearly legible.

Due to the scale and nature of this intended Project and the study area, the use of geographical information systems (GIS) to represent spatial data shall be required wherever practicable. Submitted data shall be presented in a working GIS project compatible with Environmental System Research Institute (ESRI) formats (prefer ArcGIS 10.5 or ArcGIS 10.8) and be organised into discrete themes (i.e. shape files,

geodatabases). Geodetics should be applied to data (e.g. projections, datum, scale factor, meridian info). Data themes shall illustrate, but not necessarily be limited to, the following features/attributes:

1. Proposed production area;
2. Built development (e.g., FPSOs and subsea infrastructure);
3. Location of offshore petroleum blocks;
4. Protected/managed areas;
5. Demographics of the AOI;
6. Recreation;
7. Bathymetry (contour lines at appropriate intervals, preferably in metres) including derived digital elevation models and triangulated irregular networks;
8. Sampling points for baseline data;
9. Proposed monitoring stations/points;
10. Intended effluent points;
11. Proposed buffer zones/setback distances;
12. Site layout for the Project;
13. Marine faunal habitats;
14. Administrative areas (e.g., regional corporation); and
15. Known archaeological sites and sites of historical interest.

Digital data themes or shape files should be clearly labelled/annotated with supporting metadata. The use of GIS would not otherwise exclude the use of photographs, map sheets and diagrams at easily understood and appropriate scales to illustrate the spatial extent of the Project and the impacted area. Such photographs should be indexed with the map sheet to aid in the illustration process. Updated high resolution aerial and satellite imagery should be used as reference data.

5.3. METHODOLOGY AND SIGNIFICANCE CRITERIA

Describe the general methodology used in the conduct of the EIA, including data collection and analysis, impact analysis, cumulative impact analysis, formulation of mitigation measures and monitoring programme, and assessment of alternatives. A method of determination of impact significance must be clearly outlined, including specific significance criteria that would allow the reader to understand the level of impact of the Project on key ecological and socio-cultural components and how these levels were estimated.

Data collection methodologies, protocols and quality assurance and control procedures should clearly be described and in accordance with established standards. Contractors and suppliers for offshore surveys should implement quality assurance systems that are appropriate to their study scopes. These systems should apply to all aspects of the work, from sample collection and analysis to presentation and reporting of the results.

5.4. PROJECT ALTERNATIVES

The Project Developer is required to examine and describe alternatives to the proposed Project, including components and design in accordance with Section 11 of the EP Act Cap.20:05. This investigation should include, but not necessarily be limited to, the following aspects:

1. The EIA will discuss feasible alternatives for the proposed Project and location;

2. The EIA will describe the alternatives considered for the development concept, including drilling facility alternatives, production facility alternatives, crude offloading alternatives, and alternatives for associated gas management;

3. The EIA will describe the alternatives considered for key Project technologies, including key equipment and key environmental performance criteria, during the design development - where such alternatives could have a potential environmental impact. This extends to, but is not limited to, alternatives such as drill cuttings management and produced water management. The basis for selecting the preferred alternative should be described in the context of good international oilfield practice and relevant international standards and guidelines, including but not limited to, the World Bank Group, the U.S. Environmental Protection Agency (USEPA), and the Convention for the Protection of the Marine Environment of the North-East Atlantic (also referred to as OSPAR Convention).

4. In the case of produced water management, the discussion of the basis for the selected alternative will include technical, environmental, and financial considerations that could affect the performance of the Project over time and will leverage learnings from prior Guyana developments. The EIA will evaluate the feasibility and effectiveness of alternative methods for the management and disposal of produced water, including disposal to sea, injection along with seawater for reservoir pressure maintenance, injection into a suitable offshore disposal well, or export to shore for reuse or disposal after proper treatment. Produced water treatment technologies will depend on the final disposal alternative selected and particular field conditions. Technologies to consider may include but not be limited to combinations of gravity and/or mechanical separation and chemical treatment and may require a multistage system containing a number of technologies in series to meet disposal requirements. Additional considerations should include but not be limited to any issues identified during consultation with the general public, regulatory authorities, special interest groups and other key stakeholders related to the alternatives and proposed Project. The reasoning for the selection of the proposed Project compared to other potential options should be given; and

5. The ‘no action’ alternative must also be considered. Provide a comparison of impacts as a result of a continuation of existing activities and conditions with those of the proposed Project and action alternatives. This will demonstrate

potential changes in the existing socio-cultural and environmental baseline conditions without the Project. Alternatives shall be discussed in sufficient detail to clarify the reasons for preferring certain options and rejecting others. The reasons for choice of the preferred option(s) must be explained, including the following:

a. A comparison of the adverse and beneficial effects (both to the environment and community) used as the basis for selection;
b. Compliance with government policy;
c. Compliance with the principles and objectives of sustainable development; and
d. The impact of significant delay or abandonment of the Project before all of the proposed phases are completed.

5.5. LEGISLATIVE AND REGULATORY FRAMEWORK

Examine the general policy, legislative and regulatory framework such as national policies and legislations relevant to the Project, which are not environmental media specific, and to assess the extent to which the Project is in line with these requirements. This examination should include, but not necessarily be limited to the following:

1. Environmental Protection Act Cap 20:05 and Regulations 2000;
2. National environmental policy and legislation, planning and development control frameworks including protected areas and environmental quality standards with implications for the Project, such as environmental protection, health and safety and land-use control;
3. Regional and international agreements and conventions relevant to the Project and its activities;
4. Regulatory agencies responsible for environmental protection and planning, their resources and capacity to address the issues raised by the Project; and
5. The local, regional, national and international laws relevant to the Project and/or its potential impacts.

5.6. STAKEHOLDER IDENTIFICATION AND CONSULTATION

This is enshrined in Section (11) (9) of the EP Act Cap.20:05, which states that during the course of the EIA, the Developer and the person carrying out the EIA shall:

1. Consult members of the public, interested bodies and organisations;
2. Provide to members of the public on request, and at no more than the reasonable cost of photocopying, copies of information obtained for the purpose of the EIA.

The EPA has determined that at minimum, consultations should be conducted with (but not limited to) the following stakeholders:

1. The Guyana Geology and Mines Commission (GGMC);
2. The Regional Democratic Council, Regions #1 - 6;

3. Ministry of Natural Resources;
4. Indigenous Peoples representatives' groups and communities;
5. Community-based organisations, NGOs including the World Wildlife Fund (WWF-Guianas) and Conservation International (CI-Guyana), Local decision- making bodies;
6. Other appropriate local authorities in Guyana;
7. Other industry stakeholders in the vicinity;
8. Other business interests that may be affected by the Project; and
9. The Public (include but not limited to fisherfolk, vulnerable groups, and communities directly affected by the Project in Regions 1-6 (Refer to Appendix 3 for Stakeholder Consultation Plan for further guidance).

The EIA shall address the concerns raised during the public consultation(s), including during the scoping and disclosure meetings, and other consultation(s) as part of the conduct of the EIA. The EIA Report must demonstrate that public concerns have been adequately considered by suggesting possible modifications to the Project proposal or by clarification of items within the document.

All public consultation results must be documented, and relevant records included in the appendices of the EIA. These records shall also contain details on the manner in which the public was notified, the groups targeted, a description of the stakeholder consultation process, a list of all stakeholder groups included in the process[1], the number of meetings held, location of the meetings, dates held, minutes of all meetings, a copy of the survey questionnaires used (if any), and the results of surveys.

5.7. DESCRIPTION OF THE PROJECT

A detailed Project description will be provided, including design, and the various phases of the proposed Project covering construction, installation, start-up, unplanned events and operations and include historical and current state of operations and/or exploration. Project description shall include the characteristics of the Project phases, including the nature and quantity of the materials used, plans, drawings, and models. Discussion on characteristics shall include but not limited to the following:

Development drilling stage

- Drill ship and drilling operations
  - Power generation
  - Drill cuttings treatment, and discharges
  - Drilling fluids treatment, recycling, and discharges
  - Wastewater treatment, and effluent discharges
- Seismic activities (as needed)

[1] In line with best practices of stakeholder engagement, stakeholders will be given the option to remain anonymous during the consultation processes. Should they choose to do so, their name and/or affiliation will not appear in the record.

- Remotely operated vehicle (ROV) operations
- List of the types of chemicals that would be used and the chemical registration process to be followed, including how toxicity levels are considered. Planned disposal or recycling of chemicals. Expected volume to be used per year.

Marine installation, hook-up, commissioning and start-up phase

- FPSO
  - Power generation
  - Well Ramp Up and FPSO commissioning activities schedule to achieve background flare
  - Installation of FPSO mooring system
  - Discharge of hydrostatic test water, hydrate inhibitor, and ballast water
  - Wastewater effluent discharges
- Installation of SURF equipment including ROV operations
- Installation of FPSO/SURF components stage
- Hook-up, commissioning and Start-Up of FPSO and SURF equipment

Production operations stage

- FPSO operations
  - Power and heat generation
  - Safety flaring, including background, purge, and supplemental, as applicable
  - Non-routine, temporary flaring. List of types of events that would require non-routine flaring
  - Anticipated Flare Profile for operations, including start-up and non-routine flaring
  - Optimizations to reach background flare and a gas flaring minimisation plan
  - Flare radiation levels for flaring scenarios to confirm that the design meets industry guidelines for personnel exposure
  - Design changes and embedded controls including equipment sparing to prevent unplanned flaring events
  - Treatment of produced water for discharge
  - Brine discharges from sulphate removal and potable water processing
  - Treated sanitary wastewater effluent discharge
  - Non-hydrocarbon (non-contact) cooling water discharge
  - Gas Import/Export and/or Gas re-injection and gas processing systems (including gas flaring system)
  - Seawater intake
  - Treated seawater injection into reservoir
  - Chemical use (topsides, subsea, downhole)
- Oil offloading to conventional tankers (Crude Lifting Operations)
  - Tanker power generation
  - Venting of cargo tanks during oil loading

  - Seawater intake for ballast operations
  - Tanker ballast water discharge on arrival
  - Tanker treated sanitary wastewater effluent discharge

Decommissioning stage

- Marine decommissioning vessels and FPSO
  - Power generation
  - Treated sanitary wastewater effluent discharges.
  - Well plugging and abandonment
  - Disconnection of mooring system and SURF equipment
  - Partial or complete removal of subsea facilities
  - Identify items that can be scrapped, reused and recycled.

Logistical support (across all Project stages)

- Supply and support vessel/aircraft operations
- Onshore and offshore fuel transfers from suppliers
- Utilisation of shorebases, including pipe yards and warehouses

Waste management, recycling, treatment, and disposal (across all Project stages)

- Onshore waste storage, segregation, recycling, reuse, treatment and/or disposal
- Offshore waste treatment and disposal, potentially including incineration

Non-routine, unplanned events

- Oil spill or release - FPSO/SURF (during start-up and/or production operations)
  - Oil spill or release-loss-of-well-control event
  - Other oil spills or releases including released during chemical bunkering, fuel bunkering, drilling mud bunkering, underwater release from choke valve from SURF, underwater release from jumper and gasket replacement, release of off-spec produced water produced during start-up.
  - Other unplanned events (e.g., vehicular accident, helicopter accident, vessel collision, untreated wastewater effluent discharge and any other discharges such as venting). Provide international good oilfield practice for unplanned discharge.

Schematics/graphics shall be included to illustrate the process, including, but not be limited to:

- Location and layout of subsurface facilities;

- FPSO Process Systems:
  - Oil-water-gas separation and oil desalting systems
  - Produced water treatment systems
  - Seawater treatment system
  - Cooling water treatment system
  - Water injection and water processing systems

  - Gas import/export and/or Gas re-injection and gas processing systems (including gas flaring system)
  - De-sanding system

- FPSO utility systems:
  - Process cooling
  - Process heating
  - Topside and subsea chemical injection
  - Air compression
  - Other applicable utility system

- Crude oil handling system (include processing, storage, and offloading);
- Fuel bunkering;
- Sulphate removal plant (if applicable);
- Power generation systems;
- Additional Vessel systems:
  - Ballast System
  - Slop water treatment system
  - Bilge water treatment system
  - Black water treatment system
  - Grey water treatment system
  - Vapour Recovery System
- Safety and Personal Protection System:
  - Firewater system
  - Fire and gas detection system
  - Blanket gas generation
- Mud and cuttings treatment systems.

5.8. ENVIRONMENTAL SETTING/BASELINE CONDITIONS/ STUDIES

Existing Information/Studies

As indicated in the suggested table of contents, representative baseline data for the specific environmental medium (including data compiled by review of existing information published, experts and other sources) will be compiled and presented in separate chapters. Baseline chapters must contain sufficient information to enable an assessment of the consequences on that specific resource/ receptor imposed by the Project for each phase of the Project including construction, operation and closure. The following is a general guide to the expected level of assessment and type of information required.

All readily available information, including representative information and baseline data relevant to the proposed Project site and the direct and indirect area of influence (AOI) will be assembled and reviewed including local maps and any existing EIAs. This includes relevant studies conducted for prior EIAs (Liza Phase 1, Liza Phase 2, Payara, Yellowtail, Uaru and Whiptail) as well as the associated post permitting and/or ongoing studies conducted by the Developer (granted no objection by the EPA). This information should be considered and utilised in establishing baseline conditions relevant to the proposed Project for the assessment of environmental and social impacts.

The EIA will determine and delineate the actual AOI by considering the extent of direct and indirect interactions between the proposed Project and the physical, biological and social environments. The review should as far as possible, examine publicly available documents held by but not limited to the EPA, the GGMC, Ministry of Natural Resources and other local authorities and NGOs. The review will also examine data on environmental, economic and social variables, which may include site geology, hydrogeology, surface water flow, land use in the Project area and its vicinity, the proximity of indigenous communities and the likely presence of archaeological resources in the area etc.

Examples of documents to be reviewed include:

1. Fisheries and shipping studies for the area
2. Data on aquatic resources of the area
3. NGOs information on the AOI, including CI - Guyana and WWF-Guianas
4. Topographic Maps, etc.

Readily available historic and representative baseline data for the bio-physical and socio- cultural environment must be assembled and evaluated. The historic baseline data will possibly include:

1. Biological resources in the area including the presence of any unique ecosystems, natural habitat or endangered and or critically endangered species;
2. Historical and cultural association of the AOI;
3. Permanent or transient uses of the AOI;
4. Metocean data;
5. Risk of natural hazards (e.g., seismic events);
6. Local meteorological conditions; and
7. Marine water quality, marine sediment conditions, and benthic biological communities from within the AOI.

Historic baseline data must be compiled for socioeconomic variables in the AOI including historical human activities within proximity of the study area, persons who engage in these activities and any artefacts related to those activities.

Baseline Studies/Assessment

Field and additional studies will be undertaken to fill appropriate data and knowledge gaps to enable a comprehensive description of the baseline data for the specific medium, as necessary to update existing information where appropriate. The data presented shall be representative of the study area/AOI. The term 'representative' defines the extent to which a set of measurements taken at a collection site spatially and temporally reflects the actual conditions within the AOI. Therefore, in instances where the data are being collected and reported from stations that are located off site (i.e., outside the boundaries of the AOI) a justification must be provided to demonstrate that the data are representative of the AOI. Otherwise, the Developer will be required to provide more accurate, site-specific data. The study must include changes that may occur before the Project commences in light of previous, ongoing (i.e., other operations within the defined study area) or future activities that could reasonably be determined to have a combined effect. Sufficient detail must be given to allow a clear understanding of the likely negative impacts of the proposed Project and to assess the effectiveness of any proposed mitigation measures on the specific resource/ receptor. An examination of any positive impacts should also be included to ensure as comprehensive an assessment as possible. Adequate spatial and temporal samples shall be taken to ensure a proper assessment of baseline conditions.

Baseline information shall include but not necessarily be limited to the following:

Air Quality and Climate

As far as practicable the following should be described:

1. The wind regime of the Project area, including wind speed and direction, prevailing wind conditions, seasonal variations and storm conditions as supported by representative meteorological data for the area.
2. Rainfall in the areas, including seasonal variations.
3. Air Temperature and Relative Humidity.
4. Appropriate ambient air quality parameters associated with expected emissions of this type of project and supporting baseline data.
5. Current scientific understanding of the consequences of climate change, such as potential for ocean acidification, sea level rise, and increasing ocean temperatures, based on recent IPCC reports.
6. Guyana's current capacity as a carbon sink.

Water Resources

With regard to this medium, information will be provided on ambient water quality. Based on the extent of the AOI, this may include surface water, groundwater water, and marine water, and a comparison with applicable water quality guidelines.

Biological Environment

For this medium the baseline shall include the following data on flora and fauna:

1. Use of site-specific field surveys to assess the aquatic environments for impact prediction and development of mitigation and monitoring programmes. The sampling regime must be scientifically rigorous and statistically significant to allow for future comparisons.
2. Life cycles, seasonality and migration of species (where applicable) shall also be captured.
3. Information on plant species and communities that are present within the AOI, including information on any rare or endangered plant species, and information on any specialised or unique plant communities that may be present.
4. Mapping of plant communities (for example mangroves) and the area of estimation of any community type that may be lost due to Project activities.
5. Fauna of the site and their use of the surrounding environments - document and describe any species of wildlife including, but not limited to, amphibians, fish, reptiles, birds, mammals and invertebrates, that use the AOI.
6. Detailed habitat assessment, including identification of those of resident species of major watercourses on site, and especially those which will be altered by the Project (where applicable).
7. Artisanal and ocean fisheries (whether commercial, subsistence, or recreational) including the species targeted by local communities in the study area.
8. Environmentally sensitive species and areas in the AOI.
9. Rare, threatened, endangered and endemic species.
10. Details on any invasive species (flora and fauna) discovered during baseline surveys or literature review.
11. Map showing biodiversity distribution.

Ecosystem Services

The baseline shall examine the direct and indirect contributions of the Project area to biodiversity health and human wellbeing with an emphasis on current users or

beneficiaries. Further, the EIA will need to provide information on ecosystem services and identify priority ecosystem services within the AOI.

Social and Economic, and Cultural Environment

The baseline will describe the social and economic conditions within the Project area. Representation of the baseline conditions will be relevant to the proposed Project's AOI, as it relates to its potential bio-physical and socioeconomic and cultural impacts. This may be achieved through the collection, reporting and analysis of appropriate and sufficient data from relevant sources and primary research. Map overlays (depicting any socioeconomic users within the areas of potential impact) should be used to provide a spatial portrayal of socioeconomic and cultural data. Field studies shall be undertaken as necessary to fully establish an appropriate social baseline, and to update information that may no longer be current. Appropriate data gathering methods shall be used commensurate with the level of detail required to determine risk to socioeconomic and cultural components.

The social baseline shall include, but not be limited to, the following information:

1. Information about the traditional, existing and proposed social and economic uses of Project's AOI identified above, and the nature, size, location and duration of their potential interactions with the environment. Social and economic use shall be described both for amenity and aesthetics, and in terms of its importance to cultural activities.
2. Customs, aspiration and attitudes - indicate (by providing summary of consultation results) the perceived acceptability of the proposed Project to nearby communities and users of the area.
3. Archaeological, cultural and historic value of the areas.
4. A discussion of Local Content and capacity-building efforts being undertaken by the Developer.
5. Location of fishing grounds and/or boundaries of fishing zones in relation to the Project AOI will be identified.

5.9. IMPACT ASSESSMENT

Identify all impacts that could arise during each phase of the operation and distinguish, where applicable, between negative and positive impacts, direct and indirect impacts, immediate, short-term and long-term impacts, and cumulative impacts. In analysing the impacts, consideration shall be given to, where applicable, geographical extent, intensity, frequency, uncertainty and reversibility. To illustrate significance, direct comparisons should be made between estimates of the potential impacts and the baseline conditions for given parameters/ indicators.

Describe impacts quantitatively, as far as possible. The reliability of forecasts and predictions shall be indicated as appropriate. Impacts must be categorised and illustrated using an appropriate format (e.g., matrices where applicable). Data from other existing activities using the same technology should be used to compare or assist in the prediction of impacts for this proposed Project, where applicable.

Assessment of impacts and associated ratings shall be undertaken pre-mitigation (with existing/ embedded control measures in place) and post-mitigation. A table outlining the comparison of the assessment must also be included in the EIA. A residual effects assessment summary must also be included in the EIA.

Areas of impact/hazards shall be illustrated in map form and those that are unavoidable or irreversible must be specifically identified. Significant changes to baseline conditions shall also be quantified where possible. A determination of impact significance shall be provided for each key environmental or socioeconomic and cultural component (by major phase or activity) after considering the application of proposed mitigation measures (i.e., rate the significance of residual effects following mitigation).

The potential impacts to be discussed include, but are not limited to, those related to:

1. Human beings and community (health, safety, socio-cultural);

2. Investigate possible effects to demographic and socioeconomic and cultural profiles of the communities that would be potentially affected by the Project e.g. consider local employment and training, local procurement, vulnerable groups (youth and elderly, handicapped, other users of the area etc.), transport, health services, security, lifestyle and culture. The potential for unplanned settlements, overloading of any community infrastructure and social conflict between workers and communities, should also be included;

3. The introduction of increased dangers (e.g., fire, explosion, spills, chemical and other hazardous substances, if applicable) to the surrounding environment, including coastal communities;

4. Infrastructure and utilities (water, electricity, services, waste disposal, etc.).

5. Consider the indirect impact of accessibility of this area to humans and the attendant demand on infrastructure and utilities;

6. Impact of the Project on transportation planning and traffic — discuss potential health and safety impacts due to changes in onshore and marine traffic conditions, such as increased traffic volumes;

7. Impact and potential risks associated with the transfer of crude from the FPSO to offloading tankers;

8. Discuss the potential for changes to air quality that might increase human exposure to contaminants/pollution including the impacts of the increased volume of dust and the potential health impacts associated with exposure to these contaminants/ pollutants;

9. Flora and fauna including, but not limited to, such aspects as:
    a. Impacts on terrestrial, aquatic and marine habitat use and ecology;
    b. Impacts to sensitive species such as endangered or subsistence/commercially exploited species;
    c. Expected changes in the health of flora and fauna that will result from the introduction of the activity. This must include any expected changes to species count and diversity within the study area. The assumptions used for making such correlations must be explained;
    d. Natural habitats - determine/ estimate the degree of habitat degradation likely to occur both in qualitative and quantitative terms (i.e., extent of habitat degradation or reduction as well as the reduction in biodiversity and available ecological niches);
    e. Wider impacts on marine ecology of the study area, as effects are transferred along the food chain;
    f. Include impact to migration pathways for fauna over production life of the field.

10. Marine Water Quality — including, but not limited to, such aspects as the effect of the discharges from the Project on marine water quality (discharges included but not limited to produced water, sulphate removal, ultrafiltration, and wash water processing brines, grey and black water, ballast water exchange, drill cuttings and muds), as well as oil spills. This assessment will be supported by modelling analyses as follows:
    a. Produced Water Dispersion Modelling: To assist in understanding the potential impacts of the routine discharge of produced water, produced water dispersion modelling must be conducted. The dispersion modelling study should be done using minimum and maximum flow rates to address changes in environmental values and sensitivities on a seasonal basis.
    b. Cooling Water Dispersion Modelling Study: To assess the change in temperature and the residual chlorine concentration in the cooling water stream, cooling water dispersion modelling must be undertaken. The dispersion modelling study should be done using minimum and maximum flow rates to address changes in environmental values and sensitivities on a seasonal basis.
    c. Sulphate Removal Modelling Study: As the sulphate removal, ultrafiltration and wash water processing brines may contain constituents exceeding levels of the ambient marine waters, a dispersion modelling study must be done. The study should be done using minimum and maximum flow rates to address changes in environmental values and sensitivities on a seasonal basis.

11. Air Quality, Climate and Climate Change: including, but not limited to, such aspects as:

a. Air quality as a result of exhaust emissions from machinery, equipment and fugitive leaks from piping components;
b. Upset events which require processes such as flaring and venting;
c. Description of Project design elements that will result in reduced emissions,
d. including greenhouse gas (GHG) emissions;
e. A quantitative discussion of Scope 1 (direct emissions from Project), Scope 2 (emissions resulting from generation of power purchased by the Project for the Project's use/consumption) and Scope 3 (indirect emissions that occur in the value chain of the project, including upstream and downstream emissions) GHG emission inventory will be prepared in accordance with API and the Intergovernmental Panel on Climate Change methodologies. GHG emissions from the Project will be compared to national and regional emissions and typical emissions from similar oil production projects;
f. The impacts of atmospheric emissions (including GHG emissions) must be rated in the EIA and a description of steps taken to reduce GHG emissions must be provided. GHG emissions reduction measures should be identified as appropriate;
g. Potential options to mitigate emissions impacts, including GHG emissions, should be discussed;
h. Fumes and vapour emissions from offloading produced oil;
i. An inventory of GHG emissions from the Project, as well as all of EEPGL's current and planned exploration, development and production operations in Guyana;
j. A discussion of GHG emissions from oil and gas operations at the Liza Phase 1, Liza Phase 2, Payara, Uaru, Yellowtail, Whiptail projects compared to GHG emissions from the Hammerhead Project. In the discussion of the presented data, technical clarifications and considerations can be made.
k. An evaluation on the effects on Guyana's carbon sink in keeping with the proposed Low Carbon Development Strategy 2030.

12. Underwater Noise: estimate the potential for increased underwater noise from all phases of the operation. Acceptable underwater noise standards applied to the various aspects of the operation shall be outlined in the EIA. The impact analysis shall present, assess and discuss potential impacts of Project generated underwater sound in the PDA, with regards to biological marine life in the water column and must be accompanied by relevant underwater sound analysis. This analysis shall include different sound levels and thresholds for sound sensitive marine taxa (e.g., marine mammals, marine turtles and fish). The activities considered shall include:

    a. operation of a Floating Production Storage and Offloading (FPSO) vessel;
    b. installation of the FPSO vessel, which includes the associated installation and support vessels;
    c. operation of a drill ship; and
    d. operation of a VSP source in the vicinity of the drill centers.

13. Marine Sediments and Geology: Assess the potential for operations to affect the stability of the seafloor substrate in terms of subsurface stability (i.e., vulnerability to erosion), shear strength, porosity and compressibility and the area of seafloor affected by installation of subsea infrastructure and/or cuttings deposition, depth of cuttings deposited on the seafloor, and residual drilling fluid on deposited cuttings. Deposition of discharged cuttings and muds, as well as residual drilling fluid will be assessed via modelling. This assessment should be done in the context of baseline pre- development conditions.

14. Water Quality: Assess the types and sources of contaminants in any streams draining from the Project site into main natural watercourses. Analysis must include assessment of seasonal variations, and comparison of findings with acceptable water quality standards consistent with international standards and guidelines (World Bank, MARPOL 73/78, IMO, where applicable).

15. Solid Waste: identify the activities of all phases of the Project that may produce both hazardous and non-hazardous solid waste, and assess the possible impacts associated with the type of waste produced. Describe and assess the expected waste streams from the proposed Project activities during the installation, operational and decommissioning phases of the Project. Include or make reference to a Waste Management Plan, which will include information on the quantity, form, and hazard of each significant waste stream (as per Appendix 1). EIA to confirm that current hazardous and non-hazardous waste facilities in Georgetown have sufficient capacity, are upgraded and suitable for their utilisation for cumulative Project waste.

16. Impacts on archaeological and historical sites and cultural resources of interest, where applicable.

17. Strategies for oil spill response: Assess the potential impacts associated with various oil response strategies, these include mechanical, chemical (surfactants proposed for use) and other countermeasures (in-situ burning and bioremediation). The ecotoxicity thresholds for chemical and oil spill response must also be identified and discuss. Waste management considerations/impacts associated with each strategy must also be discussed.

18. Economic Evaluation: The evaluation to be included in the EIA will discuss the impacts of the proposed project on key economic sectors while presenting the data from the ecosystem services and dependencies study and use this data to justify the significance of the impacts from the proposed project.

The EIA will assess potential impact of the Project on the above functions and/ or services, and describe what management measures would have to be implemented in the Project design to achieve sustainable management of the Project.

As it relates to all modelling to be done for the Hammerhead project, a representative or representatives of the Agency must be a part of or have access to real time observation of the modelling processes. The presence of the EPA as an observer fosters

trust and accountability, demonstrating the project's commitment to environmental stewardship and adherence to national standards. While the EPA will only observe, their oversight will help to validate that the models used are scientifically sound and in line with best practices. This ensures that the project's potential environmental impacts are assessed rigorously, providing confidence to stakeholders and the public that proper mitigation strategies are in place. Additionally, EPA observation may help streamline future regulatory approvals by addressing any concerns early in the process.

5.10. MITIGATION AND MONITORING—ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

Mitigation measures and monitoring should be presented in the form of an ESMP and will consolidate the management measures recommended for each environmental medium and social receptor into resource/receptor-specific sections. The ESMP shall be the management plan for the Project that seeks to manage identified potential impacts and environmental issues (by media) resulting from the proposed Project, describing the specific measures to be taken to avoid, manage or compensate for identified potential negative impacts. Mitigation measures shall specifically describe how impacts would be handled to prevent a cumulative effect with respect to the intended Project.

Proposed mitigation measures to reduce adverse effects and measures to enhance benefits must be clearly described. A list of all commitments for mitigation, monitoring and follow-up measures must be clearly recorded and included in the respective chapters for each environmental or social medium. This list shall include, at a minimum:

1. Energy efficiency of process equipment, drilling equipment, marine/subsea machinery and gas turbine generators - with an explanation of how the Project's design has been engineered to minimise GHG emissions - should be discussed in the EIA with GHG minimisation justification.

2. In consideration of significant adverse impacts that were identified and analysed in the EIA, measures shall be identified through assessment of Best Available Technologies, consistent with good international oilfield practice to avoid, mitigate or remedy such impacts to acceptable levels. These should satisfy, and show comparison with, local environmental, health and safety standards/ guidelines and, where these are not available, international standards/ guidelines shall be used. In those cases where negative impacts are known or expected to be significant, it is to the Developer's benefit to follow the mitigation hierarchy of avoidance, minimisation, and mitigation in the Project planning. Avoidance of impacts (e.g., to sensitive areas) should be the first choice and is the most beneficial to the Developer in economic terms. If significant impacts can be avoided, the costs and delays associated with mitigation planning and permitting are also avoided. If impacts cannot be entirely avoided, it is to the Developer's benefit to minimise impacts for the same reasons. Mitigation is the least desirable

course of action because of the costs and delays related to mitigation planning, design, permitting and implementation, as well as potential for some measure of degradation to or loss of natural resources.

3. A detailed monitoring plan must be provided within the ESMP for the different aspects of the Project to ensure that mitigation measures are achieving their objectives. Where monitoring indicates that objectives are not being met, contingency plans to minimise adverse situations that may arise (or that have arisen) must be described. Monitoring programmes shall address the physical, biological and social impacts of the Project. The parameters/indicators to be monitored and their respective frequencies of measurement must be detailed. The ESMP should also include the proposed locations for sampling and identify the persons or organizations responsible for the implementation of the plan. Additionally, the plan shall include a grievance mechanism which is practical and inclusive.

The consultant is required to provide explicit and detailed mitigation measures within the Environmental Management Plan (EMP) for all phases of the Hammerhead Project, from initiation through to decommissioning. Addressing all project phases ensures that potential environmental and social risks are mitigated consistently. The advantage of such detailed planning is a clear, traceable framework that enables easier monitoring and regulatory compliance, reducing the risk of unforeseen impacts.

These details must include a clear description of where each measure will be applied, specifying the exact locations within both the project area and areas that can be potentially impacted. The timeline and duration of each measure, including when it will be implemented and how often it will be reviewed or adjusted, must be outlined. The rationale behind each mitigation measure should be explained, addressing why it is necessary and how it will minimize or prevent adverse environmental impacts. Additionally, the consultant must describe how the measures will be executed, including the specific techniques, equipment, or procedures to be employed, and provide a framework for monitoring and ensuring their effectiveness throughout the entire project lifecycle.

5.11. CUMULATIVE IMPACTS

A high-level assessment will be conducted of the cumulative socioeconomic and environmental effects that are likely to result from the proposed activities in combination with other existing, approved and proposed projects in the AOI that could reasonably be considered to have a combined effect. The cumulative assessment must be based on an adequate understanding of the design and operation of the proposed activity, as well as other existing, approved and proposed projects. The Hammerhead EIA will include but not be limited to a high-level cumulative impacts assessment of the aspects noted below:

1. Marine Traffic Risk
2. Climate Change/LCDS 2030
3. Onshore Third-Party Facilities

4. Other Public Service and Infrastructure Capacity

5.12. OIL SPILL RESPONSE PLAN

The EIA will include an Oil Spill Response Plan aligned with International Best Practice such as International Oil and Gas Producers and IPIECA. The following (but not limited to) must be discussed and described in the EIA:

1. Tiered response approach and respective containment equipment, volume of surfactants and strategies (chemical, mechanical and biological) required;
2. Net Environmental Benefit Analysis and Spill Impact Mitigation Analysis for different response options;
3. Response plan must include strategies for protection and clean-up of affected coastlines in potentially impacted countries;
4. Deployment strategies for oil spill containment;
5. Implications on other production facilities within the Stabroek Block and response mechanisms;
6. Deployment of capping stack and timelines associated with same;
7. Wildlife Response Plan;
8. Location of stored dispersants; and
9. Information regarding Company Policy, plan, insurance, fund and company approved criteria for compensation of persons, companies and industries economically affected by oil or chemical spill.

5.13. DECOMMISSIONING

A description of Hammerhead decommissioning must be provided in the EIA along with a description of activities associated with this phase taking into account environmental considerations. The preliminary decommissioning plan provided in the EIA study must include the following details:

1. Regulatory framework guiding the decommissioning programme.
2. Overview of installations that will be decommissioned.
3. Proposed decommissioning options/methods and environmental considerations, taking into account the ever-evolving international best practices.
4. Proposed methods for disposal and removal of waste.
5. Proposed monitoring programmes post decommissioning.

5.14. OTHER INFORMATION

Environmental assessment requires interdisciplinary analysis. Experts in their relevant fields should interpret information obtained and where necessary, appropriate references and technical/scientific analyses shall be provided to support such interpretations. This shall also apply to social issues, especially when dealing with sensitive matters.

An EIA shall be submitted for public comment in accordance with Section 11 (10) of the EP Act. Section 11(10) stipulates a period of not less than sixty (60) days to receive public comments and this EIA and EIS would be made available for such comments as part of

an administrative record. In order to aid the review process, the following information should be submitted to the EPA:

- Two (2) hard copies, one (1) digital copy of the fully compiled EIA, and one (1) digital copy of the EIA as separate volumes. The Developer will submit a further 10 hard copies to the RDC (one copy per RDC), one hard copy and one digital copy to the National Library and one hard copy and one digital copy to the University of Guyana. Digital copies of the EIS should be in PDF format and the Executive Summary in Microsoft Word. All spatial and mapped data required must be provided digitally in a GIS format compatible with ArcMap 10.3.

A list of all studies and reports contributing the preparation of the EIA must be identified in the EIA Report.

List of Appendices

Appendix 1: EEPGL Comprehensive Waste Management Plan

The EIA should include or make reference to the EEPGL Comprehensive Waste Management Plan covering management of all wastes that could be generated by the Project; the following elements should be included:

1. Scope and Objectives
2. Roles and Responsibilities
3. Regulatory Requirements, Guidelines, and Permits
4. Waste Management Strategy
    a. Waste characterization, classification, and waste profile sheets
    b. Handling of hazardous wastes and hazardous materials
    c. Waste segregation and storage
    d. Waste tracking
    e. Waste transfers
    f. Waste treatment and disposal
5. Waste Capacity Assessment and Conclusions
6. Waste Treatment Methods and Disposal
7. Emergency Response
8. Waste Facility Auditing
9. Training
10. Waste Monitoring and Reporting
11. Estimated Project Waste Types and Quantities

Appendix 2: Stakeholder Consultation Plan for Hammerhead Development Project

The EIA is one of the principal platforms which promotes participation of the public in the process of integrating environmental concerns in planning for development on a sustainable basis according to Section 4 (1)(b); Environmental Protection Act, cap. 20:05, Laws of Guyana. Moreover, Section 9 (a) requires consultation with members of the public, interested bodies and organisations.

ERM will inform the EPA of its strategy for consulting with stakeholders in a meaningful and culturally appropriate manner in a stakeholder consultation plan. The consultation plan should capture the following information:

1.0 Summary of Previous Stakeholder Activities relative to the proposed Project, including type of information disseminated, formats, times, dates, locations, individuals, groups and organisations engaged.

2.0 **Define the Purpose and Scope** – imperative to the stakeholder engagement process is clearly defining the purpose and scope of the stakeholder consultation and making that information clear to stakeholders. In determining the purpose and scope, the following should be considered:

1. Baseline studies such as demographic factors, housing, health, employment, infrastructure;
2. Economic considerations;
3. Possible impacts on traditional systems of land tenure and other uses of natural resources;
4. Gender considerations;
5. Generational considerations;
6. Health and safety aspects;
7. Effects on social cohesion;
8. Traditional lifestyles;
9. Cumulative socioeconomic impacts of multiple operations within the Stabroek Block and surrounding offshore and onshore activities.

3.0 **Identification of Stakeholders** – In preparing and implementing the engagement plan, ERM should describe the methods used in the stakeholder mapping exercise based on:

1. Whether they will be directly or indirectly affected by the proposed Project
2. and whether that impact may be positive or negative;
3. Stakeholders who may have an interest in the proposed Project;
4. Stakeholder who can influence the proposed Project outcome.

3.1 In profiling stakeholders and methods of engagement, consideration should be given to cultural context, expectations of the engagement, level of influence, capacity to engage (language barriers, disability, gender etc.).

3.2 Socioeconomic status, social diversity, and gender aspects should also be assessed.

3.3 Emphasis should be placed on vulnerable groups in identifying how the proposed Project risks and benefits will be distributed among stakeholders.

3.4 Stakeholder identification and mapping should consider the stakeholder categories listed below (categories provided in bold text; examples of stakeholder within each category are also provided for reference):

Regulatory/Government Organisations: President of Guyana; Department of Environment and Climate Change; Ministry of Natural Resources; Sectoral Committee on Natural Resources; Members of Cabinet;

Opposition Government leaders, GGMC; GMC; EPA; Protected Areas Commission; Government Information Agency; Civil Defence Commission; Maritime Administration Department; leadership of Regions 1-10; Attorney General; Civil Aviation Authority; Guyana Defence Force; Transport and Harbours Department; Pesticides and Toxic Chemicals Board; Hydrometeorological Service; Guyana Forestry Commission; Guyana Tourism Authority; Bureau of Statistics; National Trust of Guyana; National Toashao's council; Ministry of Agriculture Fisheries Department, National Agricultural Research Institute, Mangrove Restoration Project Unit; Guyana Energy Agency, Ministry of Health, Ministry of Local Government; Ministry of Tourism; Ministry of Indigenous Peoples Affairs; Guyana Police Force; Guyana Defence Force, Guyana Wildlife Conservation and Management Commission; Guyana Power and light; Guyana Water Inc.; Ministry of Education; Ministry of Foreign Affairs; Ministry of Finance; Regional Democratic Councils and Neighbourhood Democratic Councils (Regions 1-10).

Community Groups: Georgetown residents; coastal beach users/residents; sea users; indigenous people; artisanal and commercial fisher folk

Vulnerable Groups: Indigenous peoples in Regions 1 – 6; women; persons with disability; Civil Society Organisations, the Elderly, Migrants. Detailed consultations should be conducted with communities in Region 1

Non-Governmental Organisations (NGOs): Conservation International; World Wildlife Fund; Iwokrama Centre for Rainforest Development; Caribbean Youth Environment Network; Guyana Youth and Environment Network; Religious organisations; Guyana Marine Conservation; Society; Seawalls and beyond; other environmental groups

Private Sector: Fuel and Waste, SURF, Drilling, FPSO, and Shore base Contractors, Subcontractors, and Suppliers; transportation association and operators; Market vendors; speedboat operators; Gas Station operators, farmers, water distributors/supplies, Waste Treatment operators

Academic Institutions: Caribbean Agricultural Research and Development Institute; University of Guyana; other universities and technical institutes, UG Centre for the Study of Biological Diversity; academia and researchers

Professional, Business and Workers' Associations: Private Sector Commission; Guyana Oil & Gas Association; Guyana Manufacturing and Services Association; Guyana Association of Trawler Owners and Seafood Processors; Shipping Association of Guyana; Chambers of Commerce; National Aquaculture Association of Guyana; Tourism and Hospitality Association of Guyana

Media: Stabroek News, Kaieteur News, Guyana Chronicle, Guyana Times, www.demerarawaves.com, www.inewsguyana.com, www.newsroom.gy, www.citizensreportgy.com, National Communications Network TV

Note: This is not an exhaustive list.

4.0 Identify the Appropriate Fora and Methods for the Consultation with the Various Categories of Stakeholders

Clearly state which method will be used for which category of stakeholders based on mapping outcome. Methods can include but are not limited to:

1. Interviews with stakeholder representatives
2. Surveys and polls
3. Questionnaires
4. Public meetings
5. Workshops
6. Focus groups with specific stakeholders
7. Participatory methods – such as partnerships with locals' communities, NGOs and other stakeholders.

5.0 Schedule for Implementation of Plan – The consultation plan should include a schedule for the implementation highlighting format, dates, locations and times for various consultation activities. There may be need to conduct pre-consultation engagement to ensure the implementation schedule is feasible.

6.0 Resources and Responsibilities – The plan should clearly identify the resources required for the consultation activities and persons who would be managing and implementing the stakeholder engagement component of the proposed Project.

7.0 Documentation of Consultation Activities – The plan should make provision for documentation of the consultation process, including methods used, record of who participated and who did not, timeframe of consultation activity, summary of major concerns, expectations and perceptions, summary of key discussions and interventions.

8.0 Grievance Redress Mechanism – A grievance redress mechanism should be integrated into the plan which describes how the proposed Project will deal with people affected by the proposed Project. This should include how grievances can be brought to EEPGL's attention and what the system for recourse entails.

9.0 Monitoring and Reporting – Describe any plans to involve Project stakeholders (including affected communities) or third-party monitors in the monitoring of Project impacts and mitigation programmes. Describe how and when the results of stakeholder engagement activities will be reported back to affected stakeholders as well as broader stakeholder groups.

10.0 Other – In keeping with international best practices, the development of a stakeholder engagement and consultation process is essential for effective stakeholder engagement. In order to strengthen the issue of stakeholder consultation and build trust, the Agency also recommends EEPGL utilise the ten (10) elements of stakeholder consultation[2] as follows:

a) Identification of priority issues;
b) Stakeholder analysis and consultation plan;
c) Prior Information;
d) Appropriate fora and methods for the consultation process;
e) Grievance Redress mechanism;
f) Design and implementation decisions considering stakeholder perspectives;
g) Feedback to stakeholders and transparency in decision-making;
h) Baseline data, action plans and management systems;
i) Documentation and public disclosure; and
j) Ongoing stakeholder consultation during implementation.

[2] These principles were extracted from Inter-American Development Bank (2017), Meaningful Stakeholder Consultation.