

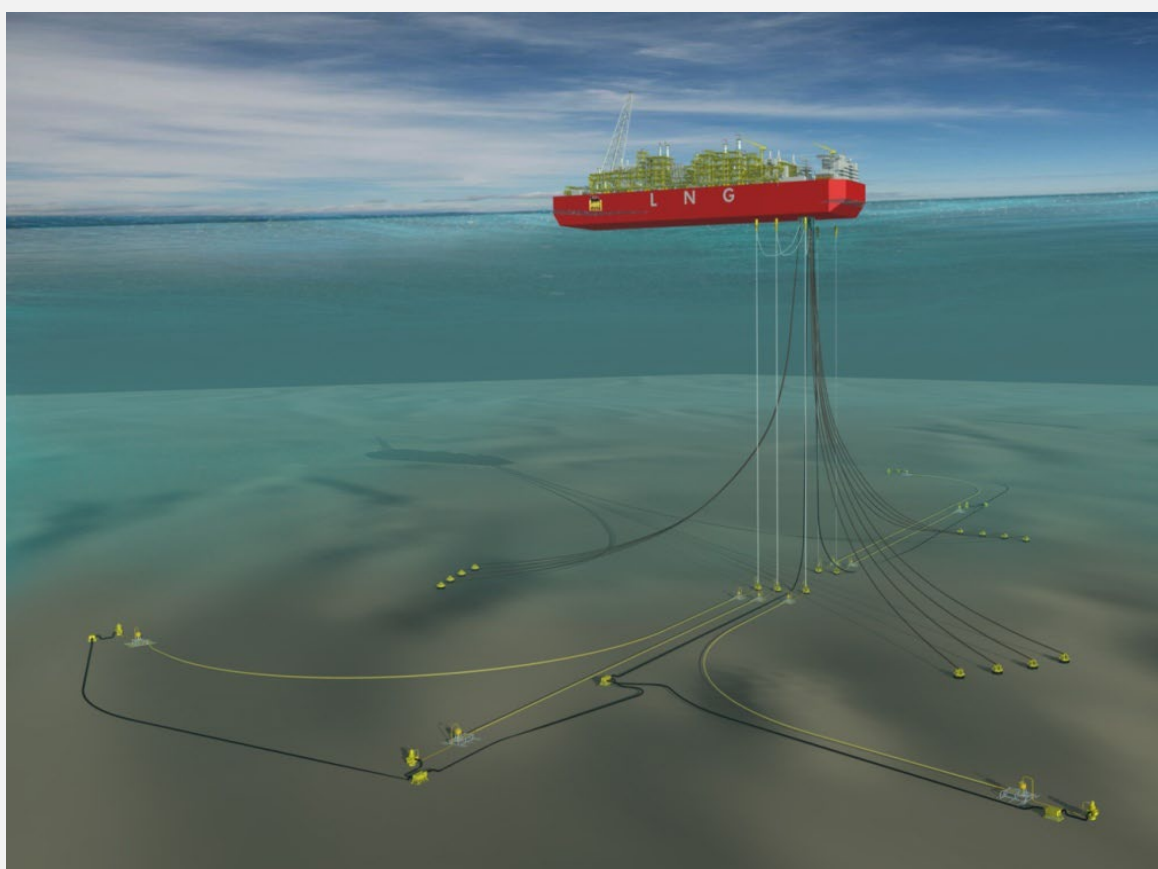


CORAL NORTH DEVELOPMENT PROJECT

ENVIRONMENTAL IMPACT STUDY

FINAL REPORT

VOLUME III – ENVIRONMENTAL MANAGEMENT PLAN



JANUARY 2025

Prepared for:

MRV

Mozambique Rovuma Venture

Mozambique Rovuma Venture S.p.A.

Prepared by:



Consultec – Consultores Associados, Lda.

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Mozambique Rovuma Venture S.p.A.

Rua dos Desportistas, Nº 918
Edifício JAT V–3, 1º a 4º Andar
Maputo, Mozambique
Tel.: +258-21-344-533
Fax: +258-21-49-7230

Consultec - Consultores Associados, Lda.

Rua Tenente General Oswaldo Tazama, No. 169
Maputo, Mozambique
Phone: +258 21 491 555
Email: consultec@consultec.co.mz

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LIST OF ACRONYMS AND ABBREVIATIONS

ACGIH	American Conference of Government al Industrial Hygienists
ADNAP	National Directorate of Fisheries
ALARP	As Low As Reasonably Practicable
AMOPI	Mozambican Association of International Oil and Gas Operators
ANAC	National Administration for Conservation Areas
ANEA	National Agency of Atomic Energy
AQGHGMP	Air Quality and GHG Management Plan
AQUA	National Agency for the Control of Environmental Quality
ARA	Regional Water Authorities
BAT	Best Available Technology
BMP	Biodiversity Management Plan
BOD	Biological Oxygen Demand
BOERP	Blowout Emergency Response Plan
BOG	Boil-off Gas
CBD	United Nations Convention on Biological Diversity
CDS-ZC	Centre for Sustainable Development of Coastal Zones
CFM	Ports and Railways of Mozambique
CFP	Chance Finds Procedure
CH ₄	Methane
CITES	Convention on the International Trade of Endangered Species of Wild Fauna and Flora
CLC	Convention on Civil Liability for Oil Pollution Damage
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
COD	Chemical Oxygen Demand
COLREGS	Convention on the International Regulations for Preventing Collisions at Sea
CRP	Cyclone Response Plan
CSO	Civil Society Organisations
DINAB	National Directorate of Environment
DNA	National Water Directorate
DNPC	National Directorate of Cultural Heritage
DPAPCD	Provincial Directorate of Agriculture and Fisheries of Cabo Delgado

DPT	Provincial Directorate of Turism
E&P	Exploration and Production
E&S	Environmental and Social
ECA	Emission Control Areas
ECO	Environmental Control Officer
EDG	Essential Diesel Generator
EHS	Environment, Health, and Safety
EIA	Environmental Impact Assessment Process
EIAPP	Engine International Air Pollution Prevention
EIS	Environmental Impact Study
EITI	Extractive Industries Transparency Initiative
EMDMP	Effluent and Marine Discharge Management Plan
EMP	Environmental Management Plan
ENH	National Hydrocarbon Company
EPCC	Exploration and Production Concession Contract
ERB	Eni Rovuma Basin
ERP	Emergency Response Plan
ERT	Emergency Response Team
ESMS	Environmental and Social Management System
ESTP	Environmental and Social Training Program
FLNG	Floating Liquefied Natural Gas
GHG	Greenhouse Gas
GM	Grievance Mechanism
GO	Grievance Officer
GTC	Gas Turbine Compressor
GTG	Gas Turbine Generator
GWP	Global Warming Potential
H ₂ S	Hydrogen Sulphide
HQ	Headquarters
HSE	Health, Safety, and Environment
I&APs	Interested and Affected Parties
IADC	International Association of Drilling Contractors
ICOMOS	International Council on Monuments and Sites

IDEPA	National Institute for the Development of Fisheries and Aquaculture
IFC	International Finance Corporation
IFEPOM	Rail and Port Institute of Mozambique
IFPELAC	National Institute for Vocational Training and Labour Studies (<i>Instituto Nacional de Formação Profissional e Estudos Laborais</i>)
IHMP	Industrial Hygiene Monitoring Plan
ILO	International Labour Organization
IMO	International Maritime Organization
IMPRESSO MSG	Responsible and Sustainable Enterprise Management System Guideline
IMS	Integrated Management System
INAMAR	Sea National Institute
INMARSAT	Convention on the International Maritime Satellite Organization
InOM	Institute of Oceanography of Mozambique
INP	National Petroleum Institute
IOGP	International Association of Oil & Gas Producers
IPCC	Intergovernmental Panel on Climate Change
IPIECA	International Oil Industry Environmental Conservation Association
ISO	International Standard Organization
ISPP	International Sewage Pollution Prevention
ISPS	International Ship and Port Facility Security
ITRANSMAR	Marine Transport Institute
JOA	Joint Operating Agreement
KPI	Key Performance Indicator
LCP	Local Content Plan
LDAR	Leak, Detection and Repair Program
LNG	Liquefied Natural Gas
LTOBM	Low Toxicity Oil Based Mud
MAAP	Ministry of Agriculture, Environment and Fisheries
MARPOL	International Convention for the Prevention of Pollution from Ships
MD	Managing Director
MEDEVAC	Medical Evacuation
MEG	Mono-Ethylene Glycol
MERP	Medical Emergency Response Plan

MGO	Marine Gasoil
MGPS	Marine Growth Prevention System
MIREME	Ministry of Mineral Resources and Energy
MMO	Marine Mammal Observation
MOPHRH	Ministry of Public Works, Housing and Water Resources
MPV	Multi-Purpose Vessel
MRV	Mozambique Rovuma Venture
MSDS	Material Safety Data Sheet
MTA	Ministry of Land and Environment
MTL	Ministry of Transport and Logistics
MTPA	Million Tons per Annum
NGO	Non-Governmental Organisation
NIOSH	National Institute for Occupational Safety and Health
NMP	Noise Management Plan
NORM	Naturally Occurring Radioactive Materials
NO _x	Nitrogen Oxides
O&G	Oil and Gas
OCAC	Environmental Control and Communication Officer
OECD	Organisation for Economic Cooperation and Development
OSCP	Oil Spill Contingency Plan
OSECP	Operative Stakeholder Engagement and Communication Plans
PCB	Polychlorinated Biphenyls
PM	Particulate Matter
POP	Persistent Organic Pollutants
PPE	Personal Protective Equipment
PS	Performance Standard
PSV	Platform Supply Vessel
QNP	Quirimbas National Park
ROV	Remote Operated Vehicles
RPO	Radiation Protection Officer
SADC	Southern African Development Community
SCCO	Social Control and Communication Officer
SCO	Social Control Officer

SECP	Stakeholder Engagement and Communication Plan
SMS	Stakeholder Management System
SO ₂	Sulphur Dioxides
SOLAS	International Convention for the Safety of Life at Sea
SO _x	Sulphur Oxides
SPA	Provincial Environmental Service
SPS	Subsea Production System
SURF	Subsea Umbilicals, Risers, and Flowlines System
SUST	Sustainability Department
TBT	Tributyltin
TENORM	Technologically Enhanced Naturally Occurring Radioactive Material
TScf	Trillions of Standard Cubic Feet
TSP	Total Suspended Particles
TSS	Total Suspended Solids
UNCLOS	United Nations Convention on the Law of the Sea
UNEP	United Nations Environment Program
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
VEC	Valued Environmental and Social Component
VOC	Volatile Organic Compound
WBM	Water Based Mud
WMP	Waste Management Plan

1 Introduction

1.1.1 Background

Mozambique Rovuma Venture (MRV) is the Operator (with 70% interest) of Area 4, located in the deep waters of the Rovuma Basin off the coast of northern Mozambique near the border with Tanzania. Empresa Nacional de Hidrocarbonetos, E.P. (10%), Galp Energia (10%) and KOGAS Mozambique Ltd. (10%) are joint venture partners.

Significant recoverable natural gas resources have been discovered in the Area 4 concession. As of today, within Area 4 there are two projects: the Coral South Floating Liquefied Natural Gas (FLNG), in production phase with the first cargo exported in November 2022, is developing the southern part of Coral 441 N/S reservoir, and the Rovuma Liquefied Natural Gas (LNG) Project, suspended in 2021 due to Force Majeure circumstances. Both projects have been granted Environmental Licenses by the former Ministry of Land and Environment (MTA), now the recently created Ministry of Agriculture, Environment and Fisheries (MAAP)¹.

In view of the size of the Coral Reservoir (17.7 Trillion Standard Cubic Feet [TScf] of natural gas in place), a multi-phased development strategy is envisaged, with MRV now proposing the development of a second Floating Liquefied Natural Gas (FLNG) project to develop the resources located in the northern portion of the Coral field – the Coral North Development Project (hereafter referred as “Project”).

MRV, as the Proponent and Area 4 Operator under Area 4 Exploration and Production Concession Contract (EPCC) and the Joint Operating Agreement (JOA), will retain the ultimate responsibility for the conduct of the respective petroleum operations. MRV shall carry out all activities related to Coral North FLNG Project, including the design, procurement, construction, and operation of all liquefaction and upstream facilities.

From a regulatory and legal perspective Coral North FLNG Project will be implemented pursuant to the comprehensive regime established and applicable in Mozambique for the purpose of enabling the development of the Area 4 and Area 1 projects in the Rovuma Basin.

This document is the Project’s Environmental Management Plan (EMP), covering all its phases and capturing the management, mitigation, and monitoring requirements resulting from the environmental and social (E&S) impact assessment carried out in Volume II of the Environmental Impact Study (EIS).

1.1.2 Objectives of the EMP

Environmental management of a proposed activity is a crucial tool to ensure any project’s environmental performance. This EMP aims to establish the groundwork and guidelines for best

¹ The Ministry of Land and Environment (MTA) was the environmental authority at the time these licenses were issued. MTA has been recently abolished by Presidential Decree No. 1/2025, and its responsibilities have been transferred to the newly created Ministry of Agriculture, Environment and Fisheries (MAAP). References to the extinct MTA are maintained in this report, when referring to past events.

practice environmental management of the Coral North Project, through a clear definition of environmental quality standards to be adhered to, and environmental actions and management procedures to be implemented in each phase of project development (design, drilling, installation, commissioning, operation, and decommissioning) as defined in the EIS.

The objectives of the EMP are to:

- Recommend changes to the Project design, to be developed in the detailed engineering phase, so as to avoid or minimize a number of negative impacts;
- Facilitate the implementation of relevant environmental mitigation actions. These should be practical, easy to implement and suited to the nature and scale of the proposed Project;
- Highlight the environmental management and implementation requirements throughout the life cycle of the Project, and the responsibilities of each of the key role players across that life cycle (proponent and contractors);
- Identify (and provide) management programs for achieving the required environmental management during all project Phases, reflecting the recommendations of the EIS;
- Outline a system for addressing non-compliance which ensures accountability, reporting, and resolution of any non-compliance;
- Encourage and achieve the highest environmental performance and response from all employees and contractors;
- Ensure that management efforts are proactive and focused to prevent impacts from occurring; and
- Supplement the proactive approach with reactive measures to minimize the severity or significance of any impacts that cannot be prevented at source.

By formally documenting environmental management measures and commitments, the EMP serves a vital role in ensuring that potential negative impacts are minimized, and positive impacts enhanced. The EMP, therefore, is a tool that guides the management and monitoring of impacts. In the event that impacts are found to be higher than initially predicted, additional mitigation measures will need to be implemented to control, reduce or prevent an impact from occurring. As such, this EMP will need to be continuously updated and amended as necessary, throughout the project life cycle, to ensure that any negative impacts from the Coral North Project are prevented or reduced and positive ones are enhanced.

1.1.3 EMP Structure

The structure of this EMP is presented in Table 1.1.

Table 1.1: Structure of the Environmental Management Plan

Chapter	Content
Chapter 1	Introduction Describes the background and structure of the EMP
Chapter 2	Legal and Regulatory Framework Provides an update to the analysis of the Project's legal framework

Chapter	Content
Chapter 3	Project Description Provides a description of the main project components as well as project location
Chapter 4	Project Standards and Emission Limits Lists all project applicable standards, and relevant limits from these standards
Chapter 5	Health, Safety, Environmental (HSE), and Sustainability Management Presents the HSE and Sustainability management system frameworks
Chapter 6	Labour and Working Conditions Policies and Procedures Refers Coral North Project labour and working conditions, policies, and procedures
Chapter 7	Implementation of the EMP Indicates the management structure for implementation of the EMP, lists the roles and responsibilities of key roles, and describes procedures for implementation and monitoring environmental management requirements during the project
Chapter 8	Recommendations for Detailed Engineering Provides the main recommendations resulting from the EIS for the detailed engineering phase. These include guidelines for detailed design and some proposed design changes, in order to avoid or minimize impacts.
Chapter 9	Environmental and Social Management Plans Lists and summarizes the environmental management plans that must, as a minimum, be implemented during the project's lifecycle
Chapter 10	Assessment and Improvement Outlines the assessment and improvement processes associated with this EMP: inspection, monitoring, audit, corrective action, and improvement
Chapter 11	Reporting Identifies the reporting and notification associated with the implementation of the EMP

2 Legal and Regulatory Framework

The EMP was developed in compliance with Mozambique's national legislative requirements and applicable international standards. In addition, relevant conventions, and protocols as well as international directives (such as the World Bank and MARPOL) related to matters not covered by national legislation although important to the E&S management of the project were considered. This section presents the national and international development and environmental legal framework applicable to the proposed project.

2.1 Institutional Framework

2.1.1 Petroleum Authorities

The Ministry of Mineral Resources and Energy (MIREME), established by Presidential Decree No. 1/2015, of 16 January, is the central body responsible for geological research, exploitation of natural and energy resources, development, and expansion of electricity infrastructure, as well as the supply of natural gas and petroleum products.

The National Petroleum Institute (INP), created by Decree No. 25/2004, of 20 August, is the government agency under MIREME who oversees regulatory and inspection tasks regarding exploration, production, and transport of petroleum products, as well as the preparation of development policies and rules regarding petroleum operations. INP ensures that all petroleum activities are conducted in accordance with laws, regulations, and international best practice, with special emphasis on optimal resource management, health, safety, and the protection of the environment.

The High Authority of the Extractive Industry was established in 2014 to supervise petroleum operations although is not currently operational.

The Energy Regulatory Authority was established in 2017 (Law No. 11/2017, of 8 September), and is responsible for regulating, controlling, and supervising the energy sector in Mozambique.

In addition to the aforementioned entities that play regulatory and supervisory roles, the State participates in petroleum operations through the national hydrocarbon company - Empresa Nacional de Hidrocarbonetos, E.P (ENH). Any investor wishing to explore Mozambican oil resources must associate with ENH. ENH participates in all phases of petroleum operations, from exploration to production, transportation, storage, and commercialization of oil and gas and their derivatives including LNG and gas to liquids, both in and out of the country.

2.1.2 Maritime Entities

The maritime governmental entities that are relevant to the activities of the Project are:

- Ministry of the Agriculture, Environment and Fisheries (MAAP), recently created by Presidential Decree No. 1/2025, of 16 January, is the central body of the State that, in

accordance with the principles, objectives, priorities and tasks defined by the Government, directs, coordinates, plans, and ensures the implementation of policies, strategies, and plans for activities in the areas of the sea, inland waters and fisheries. At the provincial level, MAAP is represented by its Provincial Directorates;

- National Sea Institute (INAMAR), created by Decree No. 88/2021, of 28 October, is an organisation with a regulatory role in the marine area. INAMAR's role is to conduct vessel inspections and to issue licenses, certifications, and similar titles associated with the movement of marine vessels;
- Institute of Oceanography of Mozambique (InOM) is responsible for ensuring safety during navigation and contributing to the development of scientific areas and the preservation of the marine environment (Decree No. 87/2021, of 28 October). It is also responsible for promoting national coordination and dissemination of warnings to navigators;
- National Institute for the Development of Fisheries and Aquaculture (IDEPA) is a public institution, endorsed with legal personality and administrative autonomy. Its vision is to ensure an integrated and coordinated development process where progress is made alongside fishing and aquaculture in the communities of fishermen and fish farmers and the quality of their environment. The mission of IDEPA is to promote actions leading to the development of fisheries and aquaculture, contributing to the improvement of the living, and working conditions of fishing and water growers' communities by increasing food production;
- National Directorate of Fisheries (ADNAP) is a public institution subordinated to MAAP whose mission is to contribute to the conservation of living aquatic resources susceptible to fishing through efficient and sustainable management, based on scientific and legal precepts and on the participation of all beneficiaries, with a view to optimizing present and future economic and social benefits for the country. Its attributions include the implementation of fisheries' management policies, strategies, and plans, carrying out the monitoring and control of the activities of the national and foreign fishing fleet that demand the national ports and ensure fisheries' co-management actions at different levels, including actions by community fishing organizations;
- Ministry of Transport and Logistics (MTL) is the central body of the State, recently created by Presidential Decree No. 1/2025, of 16 January and in accordance with the principles, objectives, priorities, and tasks defined by the Government, directs, coordinates, plans, and ensures the execution of policies, strategies, and activity plans in the areas of transport, road, rail, waterway, air, port and airport infrastructure, communications, and meteorology. At provincial level, MTL is represented by its Provincial Directorates;
- Marine Transport Institute (ITRANSMAR), recently created by Decree No. 83/2021, of 18 October, is the entity responsible for ensuring that all marine transportation activities are developed in compliance with applicable regulations;
- Rail and Port Institute of Mozambique (IFEPOM), recently created by Decree No. 84/2021, of 18 October, is the regulatory entity for the rail and port sectors and is responsible for ensuring that all rail and port activities are developed in compliance with applicable regulations;

- Ports and Railways of Mozambique (CFM) is a public company under MTL that manages Mozambican rail and port systems. The rail system was developed to serve Mozambican ports in Maputo, Beira and Nacala, linking Mozambique to neighbouring countries, with multiple investments in financial holdings.

2.1.3 Environmental Authorities

The Ministry of Agriculture, Environment and Fisheries (MAAP) was recently created by Presidential Decree No. 1/2025, of 16 January. This new ministry concentrates the attributions of the agriculture, environment and sea and fisheries sectors, which were previously under different ministries. MAAP is the central authority that plans, coordinates, controls, and ensures the execution of policies related to the management of land, forests and wildlife, environment, conservation areas, and climate change. At the provincial level, the environmental sector of MAAP is represented by the Provincial Environmental Service (SPA).

The Environmental Impact Assessment (EIA) applications are managed by MAAP through the National Directorate of Environment (DINAB) at the national level and through SPA at the provincial level.

The National Agency for the Control of Environmental Quality (AQUA) was created by Decree No. 80/2010, of 31 December, amended by Decree No. 2/2016, of 10 February, and is responsible, among other attributions, to develop and implement strategies for the integrated control of water, air, and soil pollution.

Management of conservation areas falls under the responsibility of the National Administration for Conservation Areas (ANAC), created by Decree No. 11/2011, of 25 of May, amended by Decree No. 8/2016, of 15 of April.

The Centre for Sustainable Development of Coastal Zones (CDS-ZC) focuses on development and coastal management issues and was created specifically to deal with coastal management at the national level through Decree No. 5/2003, of 18 February.

Water management is the responsibility of the National Water Directorate (DNA) and coordinated through Regional Water Authorities (ARA). The National Water Directorate is under Ministry of Public Works, Housing, and Water Resources (MOPHRH).

The National Directorate of Cultural Heritage (DNPC) is the office in the dependency of the Ministry of Culture and Education that oversees Cultural Heritage.

2.2 Legislative Framework

The Constitution of the Republic of Mozambique defines the right of all citizens to a balanced environment and the duty to protect it (Article 90). Additionally, the State is required to ensure: (i) the promotion of initiatives to ensure ecological balance and environmental preservation, and (ii) the

implementation of policies to prevent and control pollution and integrate environmental concerns in all sectorial policies to guarantee the citizen the right to live in a balanced environment supported by sustainable development (Article 117).

The proposed Project must comply with the legal requirements for environmental licensing taking into consideration the specific EIA regulations and also all the applicable environmental regulation (biophysical and social) that may be relevant to the Project throughout its life cycle (drilling and completion, installation, commissioning, operation, and decommissioning), including:

- National Environmental Policy - Resolution No. 5/95, of December 6;
- Environmental Law - Law No. 20/97, of October 1;
- Regulation for Environmental Impact Assessment - Decree No. 54/2015, of December 31;
- Regulation on the Environmental Audit Process - Decree No. 45/2024, of June 26;
- Regulation for Environmental Inspections - Decree No. 51/2024, of July 17;
- General Guidelines for Environmental Impact Studies - Ministerial Diploma No. 129/2006, of July 19;
- Guides the Public Participation Process of the EIA process - Ministerial Diploma No. 130/2006, of July 19;
- Environmental Regulation for Petroleum Operations -Decree No. 56/2010, of November 22;
- Petroleum Law - Law No. 21/2014, of August 18;
- Regulations on Petroleum Operation - Decree No. 34/2015, of December 31
- Regulation for the Management of Substances which can destroy the Ozone Layer – Decree 24/2008, of July 1 ;
- Banning the import, export, production, and commercialization of Substances that may destroy the Ozone Layer – Resolution No. 78/2009, of December 22;
- Water Policy - Resolution No. 46/2007, of October 30;
- Water Law - Law No. 16/91, of August 3;
- Regulation for Environmental Standards and Effluent Emissions - Decree No. 18/2004, of June 2, (as amended by Decree No. 67/2010, of October 31) ;
- Regulation for Raw Water Quality Standards and Discharges of Liquid and Solid Effluents - Decree 52/2023, of August 30;
- Regulation on Regulated and Non-Regularized Raw Water Rate, Decree No. 20/2016 of July 6th;
- Regulation on water quality for human consumption approves the Ministerial Diploma No. 180/2004, of September 15;
- Regulation on Urban Solid Waste Management - Decree No. 94/2014, of December 31;
- Regulation on Hazardous Waste Management - Decree No. 83/2014, of December 31;
- Regulation on Biomedical Waste Management - Decree No. 8/2003, of February 18;
- Regulation for the Prevention of Pollution and Protection of the Marine and Coastal Environment – Decree No. 45/2006, of November 30;
- Environmental Law - Law No. 20/97, of October 1;
- Forest and Wildlife Law - Law No. 10/99, of July 7;
- Regulation on the Forest and Wildlife Law – Decree No. 12/2002, of June 7;

- Conservation Areas Law – Law No. 16/2014, of June 20 (as amended by Law No. 5/2017, of May 11);
- Regulation of Law on the Protection, Conservation and Sustainable Use of Biological Diversity, Decree No. 89/2017 of December 29th;
- Regulation for the Protection, Conservation and Sustainable Use of Avifauna - Decree 51/2021, of July 19;
- Adoption of the Biodiversity Offsets Directive – Ministerial Diploma No. 55/2022, of May 19;
- Policy and Strategy of the Sea (POLMAR) - Resolution No. 39/2017, of September 14;
- Sea Law - Law No 20/2019, of November 8;
- Regulates fees payable to INAMAR for public services Ministerial - Diploma No. 218/2013, of December 30 (amended by Ministerial Diploma N°. 218/2014, of December 29) ;
- Regulation establishing the Legal Regime for the Use of the National Maritime Areas - Decree No. 21/2017, of May 24;
- Regulation on Commercial Shipping - Decree No. 35/2007, of August 14;
- Fisheries Law - Law No. 22/2013, of November 1;
- Marine Fisheries Regulation - Decree No. 89/2020, of October 8;
- Regulation on Recreation and Sports Fishing - Decree No. 82/2021, of October 15;
- Cultural Heritage Law - Law No. 10/88, of December 22;
- Regulation for the Protection of Archaeological Heritage – Decree No. 27/94;
- Tourism Law - Law No. 4/2004, of June 17;
- Tourism Interest Zones Regulation - Decree No. 77/2009, of December 15;
- Labour Law - Law No. 23/2007, of August 1;
- Regulation on the General Labour Inspectorate - Decree 45/2009, of August 14;
- Regulation for the Contracting of Foreign Citizens in the Petroleum and Mining Sectors - Decree No. 63/2011, of December 7;
- Legal regime for accidents at work and occupational diseases - Decree 62/2013, of December 4;
- Law of Protection of People, Workers, and Job Applicants Living with HIV/AIDS - Law 19/2014, of August 27;
- Mechanisms to protect and promote health and to prevent and control diseases – Law No. 3/2022, of February 10;
- Law of Private Medicine – Law No. 24/2009, of September 28;
- Health and Safety Regulation, Legislative Diploma No. 48/73 of June 5th;
- Supplements Health and Safety Regulations Legislative, Diploma No. 57/73 of November 29th;
- Regulation for the Construction and Maintenance of Technical Accessibility Devices – Decree No. 53/2008;
- Legal Framework for Management and Reduction of Disaster Risk, Law No. 10/2020, of August 24;
- Regulation of the Law for the Management and Reduction of Disaster risks, Decree No. 76/2020 of September 1st.

2.3 International Conventions

The international conventions Mozambique has joined and are relevant for the Project are briefly discussed in Table 2.1 below.

Table 2.1: Relevant international conventions

Convention	Description
MARINE	
International Convention for the Prevention of Pollution from Ships (MARPOL) 73/78	<p>The International Convention for the Prevention of Pollution from Ships (MARPOL Convention) aims to prevent pollution of the marine environment by ships from operational causes and to minimize accidental discharge of such substances. It is currently ratified by 136 nations, including Mozambique, and contains six annexes that address the prevention of different forms of pollution from ships, namely:</p> <ul style="list-style-type: none"> - Annex I: Oil: lists the conditions under which vessels are allowed to discharge oil into the sea; - Annex II: Noxious Liquid Substances: details the discharge criteria and measures for the control of pollution by noxious liquid substances carried in bulk; - Annex III: Harmful Substances Carried in Packaged Form: contains general requirements for the issuing of detailed standards on packing, marking, labelling, documentation, stowage, quantity limitations, exceptions, and notifications for preventing pollution by harmful substances; - Annex IV: Sewage: requires vessels to be equipped with either a sewage treatment plant or a sewage holding tank; - Annex V: Garbage: specifies distances from land and the manner in which different types of garbage may be disposed of and imposes a complete ban on the dumping of all forms of plastic into the sea; and - Annex VI: Air Pollution: sets limits on sulphur oxide and nitrogen oxide emissions from vessel exhausts and prohibits deliberate emissions of ozone depleting substances. <p>Mozambique ratified the MARPOL convention by Resolution No. 5/2003 of 18 February and has ratified all annexes, except Annexes IV, V, and VI.</p>
International Convention for the Prevention of Pollution of the Sea by Oil	<p>The discharge of oil or oily mixtures into the sea from vessels is regulated by the terms of the International Convention for the Prevention of Pollution of the Sea by Oil (OILPOL, 1954). While the Convention does not deal with the releases from offshore installations <i>per se</i>, it regulates vessels operating in offshore oil fields by prohibiting the deliberate discharge of oil or oily mixtures from nearly all seagoing vessels in specific areas called 'prohibition zones'. Prohibited zones generally extend at least 50 miles (80 km) from all land areas.</p>
International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1992	<p>An international maritime treaty where the fund is obliged to pay victims of pollution when damages exceed the ship owner's liability, when there is no liable ship-owner, or when the ship-owner is unable to pay its liability. The fund is also required to "indemnify the ship-owner or his insurer" in spills where a ship is in full compliance with international conventions, and no wilful misconduct caused the spill. Mozambique ratified this Convention in 2001, through Resolution no. 53/2001.</p>
United Nations Convention on the Law of the Sea (UNCLOS)	<p>The UNCLOS convention (Montego Bay, 1982) is relevant as many provisions reflect customary international law. Part XII headed "Protection and Preservation of the Environment" includes provisions relating to marine pollution. As per Resolution No. 21/96, of 26 November, the Republic of Mozambique ratified the UNCLOS.</p>
Convention on the International Regulations for Preventing Collisions at Sea (COLREGS), 1972	<p>One of the most important innovations in the 1972 COLREGs was the recognition given to marine traffic separation schemes. Rule 10 gives guidance to determining safe speed, the risk of collision and the conduct of vessels operating in or near traffic separation schemes. Pursuant to the Resolution No. 11/88, of 28 December, the Republic of Mozambique acceded to the COLREGS.</p>
International Convention for the Safety of Life at Sea (SOLAS), 1974	<p>The SOLAS Convention in its successive forms is generally regarded as the most important of all international treaties concerning the safety of merchant ships. The first version was adopted in 1914, in response to the Titanic disaster, the second in 1929, the third in 1948 and the fourth in 1960. It prescribes numbers of lifeboats, other emergency equipment and safety procedures for merchant ships. Ratified by Mozambique through Resolution No. 25/2004, of 14 July.</p>
International Ship and Port Facility Security Code (ISPS Code)	<p>The ISPS Code is implemented through chapter XI-2 Special measures to enhance maritime security in the SOLAS. The purpose of the Code is to provide a standardized, consistent framework for evaluating risk, enabling Governments to offset changes in threat with changes in vulnerability for ships and port facilities through determination of appropriate security levels and corresponding</p>

Convention	Description
	security measures. The Republic of Mozambique ratified the ISPS Code by way of Resolution No. 26/2004, of 14 July.
Convention on the International Maritime Satellite Organization (INMARSAT), London 1976, 1985, 1989	The purpose of INMARSAT is to improve maritime communications, thereby assisting in improving distress and safety of life at sea communications, the efficiency and management of ships, maritime public correspondence services, and radio determination capabilities. The Republic of Mozambique acceded to INMARSAT and to its 1985 and 1989 amendments by way of Resolution No. 15/89, of 23 November.
International Convention on Load Lines, 1966	It has long been recognized that limitations on the draught a ship may be loaded make a significant contribution to her safety. These limits are given in the form of freeboards, which constitute, besides external weather tight and watertight integrity, the main objective of the Convention. The Republic of Mozambique acceded to the International Convention on Load Lines by way of Resolution No. 12/88, of 28 December.
Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention 1972), London, 1972	This Convention regulates the dumping at sea of matter scheduled in the Convention. It contains a list of prohibited substances and substances requiring permits and sets out guidelines in this regard.
International Convention on Civil Liability for Oil Pollution Damage 1992 (1992 CLC Protocol)	This Convention provides for a compensation fund for clean-up costs and environmental damage subject to certain conditions and limits. Pursuant to Resolution Nr. 52/2001, of 6 November 2001, the Republic of Mozambique withdrew from the 1969 CLC Convention and acceded to the 1992 CLC Protocol.
Oil Pollution Preparedness, Response and Co-operation Convention	The Oil Pollution Preparedness, Response and Co-operation Convention (OPRC, 1990) came into force in May 1995 and relates to oil pollution of the marine environment throughout the world from offshore units. Countries or national governments must establish national programs for responding to oil pollution incidents, while operators of offshore units are required to have oil pollution emergency plans in place co-ordinated with the national oil response program. Further sections of the Convention deal with provision of oil pollution combating equipment, reporting, training, salvage, and international cooperation. The Republic of Mozambique acceded to this convention by way of Resolution No. 6/2003, of 18 February.
International Convention for the Control and Management of Ships' Ballast Water and Sediments (IMO, 2004)	Aims to prevent, minimize and ultimately eliminate the transfer of harmful aquatic organisms, including alien invasive species, and pathogens through the control and management of ships' ballast water and sediments. Establishes standards and procedures for the management and control of ships' ballast water and sediments. The Republic of Mozambique acceded to this convention by way of Resolution No. 58/2023, of December 29.
BIODIVERSITY	
African Convention on the Conservation of Nature and Natural Resources	The fundamental principle of this Convention consists in the Contracting States undertaking of adopting the measures to ensure conservation, utilization and development of soil, water, flora, and fauna resources in accordance with scientific principles and with due regard to the best interests of the people. Pursuant to Resolution No. 18/81, of 30 December 1981, the Republic of Mozambique acceded to the African Convention on the Conservation of Nature and Natural Resources.
Nairobi Convention	By Resolution No. 17/96 of November 26, Mozambique joined the Nairobi Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region and its Protocols. This convention aims to assist in the establishment of mechanisms for international cooperation for the prevention of threats to the marine and coastal environment and its ecological balance resulting from marine pollution, whatever its origin. Articles 5 to 10 of the Convention describe the mechanisms that must be implemented for the prevention of pollution from ships, pollution caused by waste disposal, pollution from land-based sources, seabed activities, the atmosphere and in specially protected areas. In addition, Article 13 of the Convention states that members must develop technical guidelines for the planning of major development projects as part of its environmental management policy to prevent or minimize negative impacts on the marine and coastal environment off Eastern Africa.
United Nations Convention on Biological Diversity (CBD) 1993	CBD is an international legally-binding treaty with three main goals: conservation of biodiversity; sustainable use of biodiversity; and the fair and equitable sharing of the benefits arising from the use of genetic resources. Its overall objective is to encourage actions which will lead to a sustainable future. Mozambique ratified this convention in 1994, by Resolution No. 2/94.

Convention	Description
Convention on the International Trade of Endangered Species of Wild Fauna and Flora (CITES), 1973	CITES aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival. It accords varying degrees of protection to more than 33,000 species of animals and plants. CITES was ratified by Mozambique through Resolution No. 20/81.
FISHERIES	
Southern African Development Community (SADC) Protocol on Fisheries	Mozambique ratified the SADC Protocol on Fisheries by Resolution No. 39/2002 of 30 April aimed at promoting the responsible utilization of living aquatic resources and their ecosystems. Article 14 of this Protocol refers to the protection of the marine environment and requires member states to apply the precautionary principle to ensure that activities within their jurisdiction or control do not cause major adverse impacts. In addition, legislative and administrative measures necessary for the prevention of water pollution caused by activities in interior, coastal and marine waters must be implemented.
WASTE AND HAZARDOUS WASTE	
Basel Convention on the control of Trans-boundary Movements of Hazardous Wastes and their Disposal, 1989	This convention regulates the import, export, and trans-boundary movement of hazardous waste. The Basel Convention was superseded by the Bamako Convention (see below). The Republic of Mozambique ratified the Basel Convention on the control of Trans-boundary Movements of Hazardous Wastes and their Disposal by way of Resolution No. 18/96, of 26 November.
Convention on the Ban of the Import into Africa and the Control of Transboundary Movements and Management of Hazardous Wastes within Africa, Bamako, 1991	During the negotiation of the Basel Convention, the African states represented by the Organization for African Unity adopted the Bamako Convention believing that the Basel Convention was not strict enough. The Bamako Convention totally prohibits the import of hazardous waste into Africa. The Convention came into force on April 22, 1998. The Republic of Mozambique ratified the Bamako Convention by way of Resolution No. 19/96, of 26 November.
Minamata Convention on Mercury, 2013	The Minamata Convention on Mercury is a global treaty to protect human health and the environment from the adverse effects of mercury. Major highlights include a ban on new mercury mines, the phase-out of existing ones, the phase-out and phase-down of mercury use in a number of products and processes, control measures on emissions to air and on releases to land and water, and the regulation of the informal sector of artisanal and small-scale gold mining. The convention also addresses interim storage of mercury and its disposal once it becomes waste, sites contaminated by mercury as well as health issues. Ratified by Mozambique by way of Resolution No. 36/2023, of September 21.
AIR QUALITY AND CLIMATE CHANGE	
The United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol, 1992 & 1997	UNFCCC is an international environmental treaty produced with the objective of achieving stabilization of greenhouse gas concentrations in the atmosphere at a low enough level to prevent dangerous anthropogenic interference with the climate system. The Kyoto Protocol to the UNFCCC was adopted in December 1997, whereby most industrialized nations and some central European economies in transition agreed to legally binding reductions in greenhouse gas emissions of an average of 6 to 8% below 1990 levels between the years 2008-2012, defined as the first emissions budget period. The UNFCCC was ratified by way of Resolution No. 1/94, of 24 August and the Kyoto Protocol acceded to by the Republic of Mozambique by way of Resolution No. 10/2004, of 28 July.
Vienna Convention for the Protection of the Ozone Layer, 1985, London 1990, Copenhagen 1992	As per Article 2.1 of this Convention, the Parties thereto undertook the obligation to take appropriate measures to protect human health and the environment against adverse effects resulting or likely to result from human activities which modify or are likely to modify the ozone layer. Pursuant to Resolution No. 8/93, of 8 December, the Republic of Mozambique acceded to the Vienna Convention for the Protection of the Ozone Layer and to its 1990 and 1992 Amendments.
The Montreal Protocol on Substances that deplete the Ozone Layer, 1987	Designed to control the production of ozone depleting substances in order to reduce their abundance in the atmosphere, and thereby protect the Earth's fragile ozone layer. Forbids the use of chlorofluorocarbons. Mozambique ratified this convention through Resolution No. 9/2009.
CULTURAL HERITAGE	
United Nations Educational, Scientific and Cultural Organization (UNESCO)	Designed to help identify and protect both cultural (monuments, groups of buildings and sites) and natural heritage (natural features, geological and physiographical formations, and natural sites). Mozambique ratified the convention in 1982.

Convention	Description
Convention Concerning the Protection of the World Cultural and Natural Heritage	
HUMAN RIGHTS	
International Labor Organization (ILO) conventions relating to labour	<ul style="list-style-type: none"> - Forced Labor Convention, ratified in June 2003: Convention concerning Forced or Compulsory Labor; - Freedom of Association and Protection of the Right to Organize Convention, Dec 1996: Convention concerning Freedom of Association and Protection of the Right to Organize; - Right to Organize and Collective Bargaining Convention, December 1996: Convention concerning the Application of the Principles of the Right to Organize and to Bargain Collectively; - Equal Remuneration Convention, June 1977: Convention concerning the equal remuneration for men and women workers for work of equal value refers to rates of remuneration established without discrimination based on sex; - Abolition of Forced Labor Convention, June 1977: Convention concerning the Abolition of Forced Labor; - Discrimination (Employment and Occupation) Convention, June 1977: Convention concerning Discrimination in Respect of Employment and Occupation; - Minimum age specified: 15 years June 2003: Convention concerning Minimum Age for Admission to Employment; - Worst Forms of Child Labor Convention, June 2003: Convention concerning the Prohibition and Immediate Action for the Elimination of the Worst Forms of Child Labor.
International Covenant on Civil and Political Rights	Recognizes equal and inalienable rights to all human beings in terms civil and political freedom. Ratified in 1993.
International Covenant for the Elimination of Racial Discrimination	State Parties "undertake to pursue by all appropriate means and without delay a policy of eliminating racial discrimination in all its forms and promoting understanding among all races". Ratified in 1983
Convention on the Elimination of Discrimination against Women	States have the obligation to ensure the equal rights of men and women to enjoy all economic, social, cultural, civil, and political rights. Ratified in 1997; 2008.
Convention Against Torture	State parties prohibit themselves under any circumstances from committing acts of torture and other cruel, inhuman, or degrading treatments or punishments. Ratified in 1999.
Convention on the Rights of the Child	Guarantees protection of children's rights. Signed in 1990 and ratified in 1999.
International Convention on the Rights of Migrant workers	Its primary objective is to protect migrant workers and their families, a particularly vulnerable population, from exploitation and the violation of their human rights. Signed in 2012; ratified in 2013.
International Convention on the Rights of Persons with Disabilities	States have the obligation to protect the rights and dignity of persons with disabilities.; signed in 2007.
African Union related protocols	Several protocols and charters promoting and protecting human rights and basic freedoms, children rights and others on the African continent.

2.4 International Best Practice Standards

MRV is committed to planning and implementing the project not only in line with national standards and regulations, but also in line with international best practice, notably the International Finance Corporation's (IFC) E&S performance standards and environmental, health, and safety guidelines.

The most important of these international standards and guidelines applicable to this project are described below.

2.4.1 IFC Performance Standards

The IFC Performance Standards (PS) on E&S Sustainability, published in January 2012, are recognized as being the most comprehensive standards available to international finance institutions working within the private sector. The principles provide a framework for an accepted international approach to the management of social and environmental issues.

The six IFC Performance Standards applicable to the FLNG project include the following:

- PS 1: Assessment and Management of Social and Environmental Risks and Impacts: underscores the importance of managing E&S performance throughout the life of a project. PS 1 requires the client to conduct a process of E&S assessment and to establish and maintain an Environmental and Social Management System (ESMS) appropriate to the nature and scale of the project and commensurate with the level of its E&S risks and impacts;
- PS 2: Labour and Working Conditions: recognizes that the pursuit of economic growth through employment creation and income generation should be accompanied by the protection of the fundamental rights of workers;
- PS 3: Resource Efficiency and Pollution Prevention: recognizes that increased economic activity and urbanization often generate increased levels of pollution to air, water, and land, and consume finite resources in a manner that may threaten people and the environment at the local, regional, and global levels;
- PS 4: Community Health, Safety and Security: recognizes that project activities, equipment, and infrastructure can increase community exposure to risks and impacts;
- PS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources: recognizes that protecting and conserving biodiversity, maintaining ecosystem services, and sustainably managing living natural resources are fundamental to sustainable development;
- PS 8: Cultural Heritage: recognizes the importance of cultural heritage for current and future generations.

PS 5 (Land Acquisition and Involuntary Resettlement) is not applicable to the Project, as Project implementation will not require any type of land acquisition or restriction to land use.

PS 7 (Indigenous People) is not applicable to the Project, as the concept of Indigenous People, as defined in this PS, is not applicable to Mozambique. Under IFC's PS 7, Indigenous Peoples are groups who, by virtue of their economic, social, and legal status, and/or their institutions, custom, culture, and/or language, may be characterized as distinct from mainstream society and that maintain a collective attachment to distinct habitats or ancestral territories. Although Mozambican society is composed of several different ethnolinguistic groups, they are all integrated into one mainstream society and do not have differentiated claims over the territory.

PS 1 establishes the importance of (i) integrated assessment to identify the E&S impacts, risks, and opportunities of projects; (ii) effective community engagement through disclosure of project-related information and consultation with local communities on matters that directly affect them; and (iii) the client's management of E&S performance throughout the life of the project.

IFC PS's 2, 3, 4, 6 and 8 present requirements to avoid, reduce, mitigate, or compensate for impacts on people and the environment and to improve conditions where appropriate. Where social or environmental impacts are anticipated, the client is required to manage them through its ESMS consistent with PS 1.

The IFC PSs are further defined with corresponding Guidance Notes that provide guidance on the requirements contained in the standards and on good sustainability practices to assist clients in improving project performance.

2.4.2 IFC Environmental Health and Safety Guidelines

The IFC Environmental Health and Safety (EHS) Guidelines are technical reference documents with general and industry-specific examples of Good International Industry Practice, as defined in IFC's PS 3 on Resource Efficiency and Pollution Prevention.

The EHS Guidelines contain the performance levels and measures that are normally acceptable to IFC and are generally considered to be achievable in new facilities at reasonable costs by existing technology. For IFC-financed projects, the application of the EHS Guidelines to existing facilities may involve the establishment of site-specific targets with an appropriate achievement timetable. The environmental assessment process may recommend alternative (higher or lower) levels or measures to become project- or site-specific requirements, if acceptable to IFC.

The relevant Industry Sector IFC guidelines applicable to the FLNG project include the following:

- EHS Guidelines for Liquefied Natural Gas Facilities;
- EHS Guidelines for Offshore Oil and Gas Development;
- EHS Guidelines for Thermal Power Plants;
- EHS Guidelines for Shipping;
- EHS General Guidelines.

2.4.3 United Nations Guiding Principles on Business and Human Rights

In 2011, the United Nations Human Rights Council endorsed the UN Guiding Principles on Business and Human Rights, a set of guidelines for states and companies to prevent and address human rights abuses committed in business operations.

The Guiding Principles clarify what is expected of business enterprises with regard to human rights and outline the process through which companies can identify their negative human rights impacts and demonstrate that their policies and procedures are adequate to address them.

The Guiding Principles affirm that business enterprises must prevent, mitigate and, where appropriate, remedy human rights abuses that they cause or contribute to. Businesses must seek to prevent or mitigate any adverse impacts related to their operations, products, or services, even if these impacts have been carried out by suppliers or business partners.

The responsibility to respect applies to all internationally recognized human rights expressed in the International Bill of Human Rights and the International Labour Organization Declaration on Fundamental Principles and Rights at Work. To meet the responsibility to respect, business enterprises must have the necessary policies and processes in place. The Guiding Principles identify three components of this responsibility:

- First, companies must institute a policy commitment to meet the responsibility to respect human rights;
- Second, they must undertake ongoing human rights due diligence to identify, prevent, mitigate and account for their human rights impacts;
- Finally, they must have processes in place to enable remediation for any adverse human rights impacts cause or contributed to by business.

2.4.4 Extractive Industries Transparency Initiative – Transparency and Reporting

The Extractive Industries Transparency Initiative (EITI) is a global coalition of governments, companies and civil society working together to improve openness and accountable management of revenues from natural resources.

Countries implement the EITI Standard to ensure full disclosure of taxes and other payments made by oil, gas, and mining companies to governments. These payments are disclosed in an annual EITI Report allowing citizens to see how much their government is receiving from their country's natural resources. Mozambique has been an EITI compliant country since October 2012.

2.5 Requirements of International Industry Guidelines

Best practice guidelines and standards have also been produced by a number of marine, conservation and oil and gas industry bodies, in terms of the environmental impacts and impact assessment methods associated with onshore and offshore gas extraction. This section summarizes key documents, principles and approaches that are relevant to the Project.

2.5.1 International Association of Drilling Contractors Guidelines

The International Association of Drilling Contractors (IADC) Guidelines are designed to supplement company Health, Safety, and Environment (HSE) programs and operating procedures. These safe operating procedures contained in the guidelines have been adopted by many drilling contractors

and government regulatory bodies and provides a basis on which the drilling contractors can build a HSE program.

The guidelines outline aspects such as medical evacuation and rough weather procedures, provisions related to the protection of the environment including air emissions, waste management, spill prevention and control, fire prevention and control, Personal Protective Equipment (PPE), and Emergency Action Plans.

2.5.2 International Association for Oil and Gas Producers

The International Association for Oil and Gas Producers (IOGP) provides documents and guidelines to assist its members develop best HSE practices. Of special importance for the project are:

- Environmental aspects of the use and disposal of non-aqueous drilling fluids associated with offshore oil and gas (O&G) operations – provides a comprehensive synopsis of global information about the environmental impacts of discharges of drilling fluids;
- Environmental management in O&G exploration and production (E&P) – provides an overview of the environmental issues and the technical and management approaches to achieving high environmental performance in the activities necessary for O&G E&P globally;
- Guidelines for the development and application of HSE Management Systems – describes the main elements necessary to develop, implement and maintain a HSE management system by the operators;
- E&P waste management guidelines – provides a general description of waste management principles; an identification and overview of E&P activities and associated wastes; and options of waste reduction, recycling, treatment, and responsible disposal;
- Key questions in managing social issues in O&G projects – provides a tool to help with social planning issues and is targeted to project management, by helping to identify questions that may be important in their leadership role; and business and project teams, by helping in the identification of issues that may be important in project development and management.

2.5.3 International Petroleum Industry Environmental Association

The International Petroleum Industry Environmental Association (IPIECA) is the global oil and gas industry association for E&S issues. IPIECA was formed following the launch of the United Nations Environment Program (UNEP) and is still the main channel of communication with the United Nations. IPIECA's membership (including Eni) covers over half of the world's oil production.

IPIECA helps the O&G industry improve its E&S performance by: a) developing, sharing and promoting good practices and solutions; b) enhancing and communicating knowledge and understanding; c) engaging members and others in the industry; d) working in partnership with key stakeholders.

The work of IPIECA is supported by a number of specialist working groups; drawing on the skills and experience of an international membership and operating with support from a secretariat. IPIECA currently has working groups that address the following areas: biodiversity; climate change; health; oil spill preparedness; operations and fuels; reporting; social responsibility, and water.

In particular, the Social Responsibility Working Group provides IPIECA members a unique forum to share information and coordinate responses to some of the social responsibility issues and challenges surrounding the O&G industry. The Social Responsibility Working Group is currently working on human rights, indigenous peoples, local content, sustainable social investment, management systems and responsible security.

3 Project Description

3.1 Project Overview

The proposed Coral North FLNG is located in Area 4, within the deep waters of the Rovuma Basin, in the northern portion of the Coral reservoir, approximately 10 km north of the Coral South FLNG, and more than 50 km from the coastline of Palma District, Cabo Delgado Province. Water depth at the proposed FLNG location is approximately 2,000 m (Figure 3.1). The figure also shows the location of the Coral South FLNG, for context, although only Coral North FLNG is within the scope of this EMP. The activities of Coral South FLNG are governed under a separate Environment License and respective EMP.

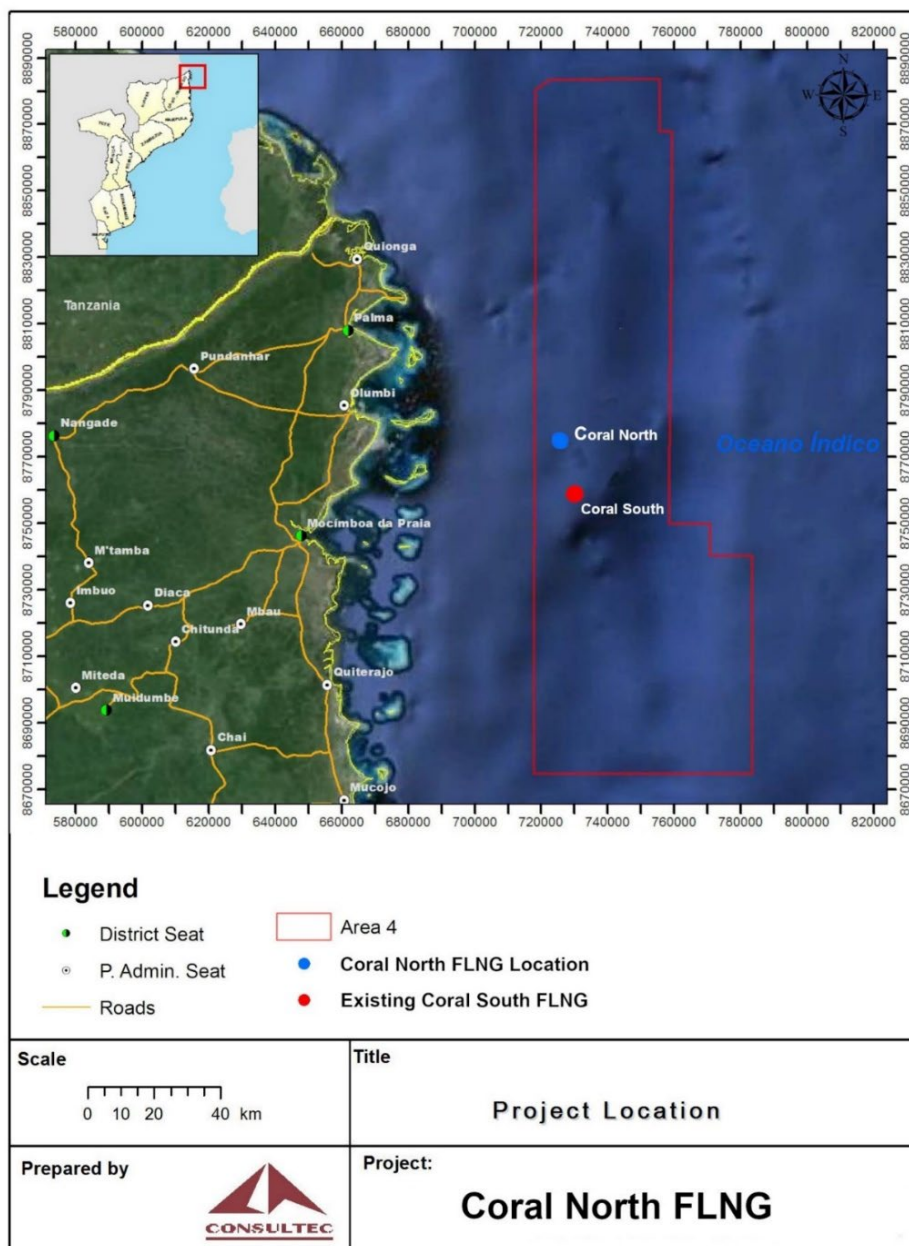


Figure 3.1: Location of the proposed Coral North FLNG

The Coral North Project includes both offshore and onshore components and activities.

The offshore components include the following:

- Producer wells – six (6) subsea wells for the extraction of natural gas from the Coral reservoir. Two of the six wells may be drilled at a later stage;
- Subsea production system with Umbilicals, Risers, Flowlines System (SURF) – subsea infrastructure to supply gas to the FLNG facility;
- FLNG vessel moored offshore more than 50 km off the coast. The FLNG is an offshore floating gas treatment, liquefaction, storage, and offloading vessel (~432m of overall hull length and ~66m hull breadth), with a production capacity of 3.5 MPTA (million tons per annum).

The offshore activities are related to the production and export of LNG, and supporting activities, including:

- Production of LNG – reception of natural gas from wells through the SURF system; processing, liquefaction, and temporary storage of natural gas aboard the FLNG;
- Export of LNG and condensate – offload of the LNG and condensate onto carrier vessels for export;
- Support and logistic activities – operation of supply vessels coming from the onshore logistic base, operation of tug vessels and multi-purpose vessels in the FLNG proximity and docking and material movements to / from the FLNG and / or supply vessels.

All these offshore components and activities will be located in the offshore Area 4 more than 50 km from the Cabo Delgado mainland.

The onshore Project components are related to onshore personnel and support logistic operations to the offshore FLNG and will be carried out from the following main hubs:

- Port facilities in Pemba Port, namely berthing for supply vessels;
- Facilities of Pemba airport, namely the operation of existing helicopter services;
- Logistics yard in Pemba;
- Offices in Pemba;
- Offices in Maputo.

The onshore activities will include:

- Office activities, both in the Pemba and Maputo offices;
- Operation of the logistics yard in Pemba, which will include reception and temporary storage of materials and goods to be transported to the FLNG;
- Operation of a berthing area in the Pemba Port, including berthing and bunkering of supply vessels, tugs, security, and multi-purpose vessels, and loading of supply vessels with goods and materials to be transported to the FLNG;
- Operation of dedicated helicopter services at the existing facilities of Pemba airport.

Most, if not all, onshore activities will be undertaken within the physical footprint of existing facilities (Maputo and Pemba offices, Pemba port and airport).

Project implementation will include the following sequential phases:

- Drilling and completion phase: a drilling ship will be used to drill and complete the six (6) subsea production wells;
- Installation phase: the subsea production system (SPS) will be installed (including preparation of the seabed and installation of subsea items, mooring chains, and anchors) and the FLNG will be towed to the site and hooked up to the SPS. It should be noted that the FLNG vessel itself will be built overseas, in South Korea, as no national shipyard has the capacity to carry out this work;
- Commissioning and start-up phase: the FLNG and all its equipment will be tested, to confirm it is ready to start operations. This includes hydro-testing and dewatering of subsea flowlines and LNG facility pipe work;
- Operation and maintenance: natural gas will be extracted from the wells, treated, condensed, and exported. This includes well, infield flowline, and flexible riser operations, and FLNG facility operation, export shipping, and maintenance activities;
- Decommissioning phase: the SPS will be decommissioned (flushing of subsea flowlines, capping of wells) and the FLNG vessel will be disconnected from the SPS and towed away.

Current high-level project schedule estimates start-up in the second semester of 2026 with the start of operations, and LNG production, in 2027. Once operational, the FLNG will operate offshore for at least 25 years without the need for onshore berthing and dry-docking.

4 Project Standards and Emission Limits

4.1 Project Standards

The following standards and guidelines have been used as reference for the Project:

- National standards:
 - Regulations on the Standards for Environmental Quality and Effluent Emissions (Decree 18/2004, as amended by Decree 67/2010);
 - Regulation on the Prevention of Pollution and Protection of the Marine and Coastal Environment (Decree 45/2006).
- International standards and guidelines:
 - Equator Principles 4 - 2020;
 - International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978 (MARPOL 73/78), namely Annexes 1 through to 6;
 - IFC EHS General Guidelines 2007;
 - IFC EHS Guidelines for Ports, Harbours, and Terminals 2017;
 - IFC EHS Guidelines for Thermal Power Plants 2008;
 - IFC EHS Guidelines for Shipping 2007;
 - IFC EHS Guidelines for LNG 2017;
 - IFC EHS Guidelines for Offshore Oil and Gas Developments 2015;
 - Organisation for Economic Cooperation and Development (OECD) Recommendations of the Council on Common Approaches for Officially Supported Export Credits and Environmental and Social Due Diligence (the 'Common Approaches') 2016;
 - IFC Performance Standards 2012.
- Eni internal standards and guidelines of reference include:
 - Management System Guideline msg-hse-eni spa_en_r04
 - Management System Guideline – Greenhouse gas accounting and reporting protocol – MSG HSE Annex E-B r02;
 - Management System Guideline – Biodiversity and ecosystems – MSG_HSE_Annex E F;
 - Professional Operating Instruction – Product safety in Eni Natural Resources – opi-hse-004-eni spa_nr_r02
 - Professional Operating Instruction – Analysis of the environmental aspects and of the impacts/risks for the environment and the organization – opi-hse-008-eni spa_en_r05;
 - Professional Operating Instruction – Industrial hygiene in Eni Natural Resources – ope-hse010-eni-spa-nr
 - Professional Operating Instruction – Monitoring system to assess the effects of emissions on air quality – opi hse-011-eni spa
 - Professional Operating Instruction – Oil spill contingency planning guideline – opi-hse-011-eni_spa_nr_r01

- Professional Operating Instruction – Noise and vibration management – opi sg hse 012 e&p r01;
- Professional Operating Instruction – HSE competency, training and awareness – opi-hse-008-eni spa_r01;
- Professional Operating Instruction – Sustainable water management for the upstream sector – opi hse 021 eni spa nr_ r01;
- Professional Operating Instruction – Management of environmental aspects in development processes – opi-hse-022-eni spa_nr
- Professional Operating Instruction – Management of environmental aspects in operations – opi-hse-023-eni spa_nr;
- Professional Operating Instruction – HSE risk management and reporting – opi hse -025_eni spa_nr_ r01;
- Professional Operating Instruction –Contract Health, Safety and Environmental Requirements for Services, Engineering, EPC/EPIC/EPF, Goods – opi-sg-hse-027_ups_r01
- Professional Operating Instruction – NORM and TENORM Management – opi hse 048_r1;
- Professional Operating Instruction – Management and accounting of methane emissions in Upstream Oil and Gas Activities; - opi sg hse 049_r01;
- Technical Guideline – Biodiversity and ecosystem services impact assessment and management – AMTE TG 013 r00;
- Technical Guideline – GHG emissions inventory, accounting and reporting for Upstream O&G Activities – AMTE TG 015 r00
- Best Practice – PCB/PCT and ozone depleting substances – bp hse 006 eni spa_nr r01;
- Best Practice – Waste management in Natural Resources activities – bp HSE 007 eni spa_nr r01;
- Best Practice – HSE and social aspects on decommissioning and environmental restoration activities – BP hse 008 eni spa_nr r01;
- Best Practice – Environmental context evaluation for development Projects – bp hse 010 eni spa_nr r01;
- Best Practice – Air quality monitoring in upstream oil and gas activities – - bp hse 011 eni spa_nr r01;
- Best Practice – Management of air emissions in Natural Resources activities – bp hse 012
- Best Practice – Illumination – assessment and mitigation measures – bp hse 013 eni spa_NR r01;
- Best Practice – Assessment and remediation of potentially contaminated sites – bp hse 014 eni spa_nr r01;
- Best Practice – Environmental, social and health impact assessment– bp hse 016 eni spa_nr r01;

- Best Practice – Offshore environmental monitoring activities: marine water and sediment quality – bp hse 017 eni spa_nr r01;

4.2 Ambient Seawater Quality Standards

The following table present the ambient seawater quality standards (receiving ambient) that should be applied in the Project area.

Table 4.1: Ambient seawater quality standards

Parameter	Standard ⁽¹⁾
Floating Material	Virtually absent
Oil and grease	Virtually absent
Substances that produce colour, odour, and turbidity	Virtually absent
Artificial dyes	Virtually absent
Substances which form undesirable deposits	Virtually absent
Substances and conditions that favour unwanted aquatic life forms	Virtually absent
Biochemical Oxygen Demand (BOD)/5 days, 20°C	≤ 5 mg/L
Dissolved Oxygen	≤ 6 mg/L
pH	6.5-8.5 No changes in greater than 0.2
Aluminium	1.5 mg/L
Ammonium	5.0 mg/L
Antimony	0.2 mg/L
Total Arsenic	0.5 mg/L
Barium	5.0 mg/L
Beryllium	1.5 mg/L
Boron	5.0 mg/L
Total Cadmium	0.2 mg/L
Lead	0.5 mg/L
Cyanide	0.2 mg/L
Residual chlorine	0.01 mg/L
Copper	1.0 mg/L
Total Chromium	0.05 mg/L
Tin	4.0 mg/L
Phenols	0.5 mg/L
Soluble Iron	0.3 mg/L
Fluorites	10 mg/L
Manganese	0.1 mg/L
Mercury	0.01 mg/L
Nickel	0.1 mg/L
Nitrates	10 mg/L
Nitrites	1.0 mg/L
Silver	0.005 mg/L

Parameter	Standard ⁽¹⁾
Selenium	0.05 mg/L
Surfactants that react to the Methylene Blue	0.5 mg/L
Sulphites with H ₂ S	1.0 mg/L
Thallium	0.1 mg/L
Uranium	0.5 mg/L
Zinc	5.0 mg/L

Source: (1) Annex V, Decree No. 18/2004 (as amended by Decree No. 67/2010).

4.3 Emission Limits

4.3.1 Liquid Effluents

4.3.1.1 Sewage and/or Sanitary Water

The following streams are sent to the sewage treatment packages:

- Black water (sewage from toilet bowls in the accommodation, medical centre, and forward machinery space);
- Grey water (effluent from sinks, washbasins, showers, laundry and sweat drains).

Table 4.2 presents the Project emission limits² for sewage discharge, as per MARPOL guidelines (Annex IV - Resolution MEPC.227(64)) and national regulation. National Decree No. 45/2006 states that the discharge of waste (including sewage) is allowed if it complies with international guidelines³. MARPOL is the main international convention covering prevention of pollution of the marine environment by ships from operational or accidental causes. IFC EHS Guideline Offshore Oil and Gas Development advises that treatment of sewage generated at offshore facilities should comply with MARPOL.

Table 4.2: Treated sewage effluent emission limits

Parameter	Emission limit ⁽¹⁾
pH	6.0 – 8.5
Total Suspended Solids (TSS)	35 mg/l
Biochemical Oxygen Demand (BOD ₅)	25 mg/l
Chemical Oxygen Demand (COD)	125 mg/l
Thermotolerant Coliform	100 MPN/100 ml

Reference: ⁽¹⁾ MARPOL 73/78 Annex IV - Resolution MEPC.227(64) (additionally IFC EHS Guideline for Offshore Oil and Gas Development advises that treatment of sewage generated at offshore facilities should comply with MARPOL 73/78).

² Emission limits are maximum allowable concentrations in an effluent, as established by national laws or international guidelines, for parameters that are considered of interest for the type of discharge in question (i.e., laws and guidelines do not establish emission limits for all parameters that could conceivably be present in a specific type of discharge, only for those that are of concern).

³ It should be noted that while Decree No 18/2004 (Regulations on the Standards for Environmental Quality and Effluent Emissions) sets emission limits for sewage waters in its Annex IV, these are interpreted as referring to discharges to surface and/or interior waters or land only, as per Article 16, number 3 of this decree.

4.3.1.2 Produced Water

The following streams are sent to the produced water treatment package and are stored in the produced water on-spec/off-spec tank:

- Treated produced water;
- Treated effluent from mono-ethylene glycol (MEG) regeneration and reclamation package.

National regulations do not specify emission limits for offshore industrial effluent discharges⁴. The applicable international guideline is the IFC EHS Guidelines for Offshore Oil and Gas Development, which only establishes emission limits for oil content in offshore discharges of produced water.

Table 4.3 presents the Project emission limits for the treated produced water effluent.

Table 4.3: Treated produced water effluent emission limits

Parameter	Project Standard
Oil content ¹	42 mg/L (daily maximum) 29 mg/l (monthly average)

Reference: ¹ IFC EHS Guidelines for Offshore Oil and Gas Development.

4.3.1.3 Slop and Bilge Effluents

The slop tanks (clean and/or dirty) receive flows from the following sources:

- Bilge transfer header;
- Washing header;
- Slop recirculation and/or transfer header;
- Non-Hazardous open drains;
- Hazardous open drains;
- Slop water treatment package;
- Drain header;
- HC close drain drum

Table 4.4 presents the Project emission limits for bilge water and deck drainage. MARPOL guidelines apply, as these are vessel effluent streams.

Table 4.4: Treated bilge water and deck drainage effluent emission limits

Parameter	Emission limit*
Oil content	15 ppm

Reference: * MARPOL 73/78 Annex I (additionally IFC EHS Guideline Offshore Oil and Gas Development advises that treatment of bilge water and deck drainage (nonhazardous and hazardous drains) generated at offshore facilities should comply with MARPOL 73/78).

⁴ The recently published Decree 52/2023, of August 30th, updates the requirements for emission limits for industrial effluents for discharges to superficial or underground waters, and does not apply to effluents discharged to marine waters.

4.3.1.4 Cooling Water

Table 4.5 presents the Project emission limits for cooling water discharge, as per IFC EHS Guidelines for Offshore Oil and Gas Development.

Table 4.5: Cooling water emission limits

Parameter	Emission Limit
Temperature increase	No more than 3°C difference at the edge of mixing zone ¹

References: ¹ IFC EHS Guidelines for offshore Oil and Gas Development.

4.3.2 Air Emissions

4.3.2.1 Offshore Air Emissions

Marine vessels

Air emissions will follow MARPOL Annex VI, which limits the main air pollutants contained in ships exhaust gas, including sulphur oxides (SO_x) and nitrogen oxides (NO_x), and prohibits deliberate emissions of ozone depleting substances. MARPOL Annex VI also regulates shipboard incineration, and the emissions of volatile organic compounds (VOC) from tankers.

Table 4.6 presents MARPOL emission limits for NO_x. Different levels (tiers) of control apply based on the ship construction date.

Table 4.6: NO_x emission limits

Tier	Ship construction date on or after	Total weighted cycle emission limit (g/kWh) ¹ n = engine's rated speed (rpm)		
		n < 130	n – 130 - 1999	n ≥ 2000
I	1 January 2000	17.0	45·n ^(-0.2)	9.8
II	1 January 2011	14.4	44·n ^(-0.23)	7.7

Reference: ¹ MARPOL Annex VI.

Table 4.7 presents MARPOL emission limits for SO_x.

Table 4.7: SO_x emission limits

Ship construction date on or after	Global sulphur limits	ECAs sulphur limits
1 January 2012	4.50% m/m	3.50% m/m
1 July 2010	1.50% m/m	1.00% m/m

Reference: MARPOL Annex VI.

FLNG

Table 4.8 provides the atmospheric emission limits for gas turbines.

Table 4.8: Air emission limits for gas turbines

Stream	Parameter	Gas turbines Adopted operational limit (mg/Nm ³) 15% O ₂
Natural gas	NO _x	50 ⁽¹⁾
	SO _x	5 ⁽¹⁾
	Particulate matter (PM)	10 ⁽¹⁾
	Carbon monoxide (CO)	100 ⁽¹⁾
	Hydrogen sulphide (H ₂ S)	N/A
	Benzene	N/A
	Ni+Vi	N/A
Fuels Gas (other than Natural Gas)	NO _x	120 ⁽¹⁾
	SO _x	20 ⁽¹⁾
	PM	50 ^(1,2)
	CO	N/A
	H ₂ S	N/A
	Benzene	N/A
	Ni+V	N/A
Low Weight Liquid Fuel	NO _x	50 ⁽¹⁾
	SO _x	0.2 ton/day (500 MW) ⁽²⁾ 0.1 ton/day (<500 MW)
	PM	50 ^(1,2)
	CO	100 ⁽¹⁾
	H ₂ S	N/A
	Benzene	N/A
	Ni+V	N/A

Source: ⁽¹⁾ European Union Guideline 2010/75/EU. ⁽²⁾ Decree 18/2004, Annex II – Power Plant Stations.

Table 4.9 provides the atmospheric emission limits for diesel generators.

Table 4.9: Air emission limits for diesel generators

Diesel generators megawatt thermal input	Parameter	Adopted operational limit or procedure (mg/Nm ³) 15% O ₂
≥ 50MWth	NO _x	<300MWt: ⁽¹⁾ - if the diameter is [mm] <400: 1460 - if the diameter is [mm] >400: 1850 - 2000 (dual fuel) ≥300MWt: 740 ⁽¹⁾
	SO _x	<300MWt: 1170 or <2% S fuel ⁽¹⁾ >300MWt: 585 or use of 1% S fuel ⁽¹⁾
	PM	50 ⁽¹⁾
	CO	Not present in the considered international and company standards/guidelines

Diesel generators megawatt thermal input	Parameter	Adopted operational limit or procedure (mg/Nm ³) 15% O ₂
3-50 MWth	NO _x	If the bore size diameter is [mm] <400: 1460 ⁽²⁾ If the bore size diameter is [mm]>400: 1850 ⁽²⁾
	SO _x	1.5% sulphur in Fuel Oil (up to 3% for specific project issue such as poor availability) ⁽²⁾
	PM	50 (up to 100 for specific project issue such as poor availability) ⁽²⁾
	CO	Not present in the considered international and company standards/guidelines

Source: ⁽¹⁾ IFC EHS Guidelines – Thermal Power Plants. ⁽²⁾ IFC General ESH Guidelines Environmental Air Emissions and Ambient Air Quality.

Table 4.10 provides the atmospheric emission limits for thermal oxidizers.

Table 4.10: Air emission limits for thermal oxidizer

Parameter	Adopted operational limit (mg/Nm ³)
NO _x	300 ⁽¹⁾
SO _x	500 ⁽²⁾
PM	20 ⁽¹⁾
H ₂ S	15 ⁽¹⁾
Benzene	5 ⁽¹⁾
Toluene	300 ⁽³⁾
Ethylbenzene	150 ⁽³⁾
Xylene	300 ⁽³⁾
Toluene + Ethylbenzene + Xylene	300 ⁽³⁾
Ni+V	2 ⁽²⁾

Sources: ⁽¹⁾ Decree 18/2004, Annex II – Petrochemical industry; ⁽²⁾ Decree 18/2004, Annex II - Oil refinery; ⁽³⁾ Italian regulation, Legislative Decree 152/2006.

4.3.2.2 Onshore Air Emissions

Onshore emissions will be generated by the waste treatment plant incinerator. While there are no specific air emission country standards for these activities, the standards adopted for the project are indicated in Table 4.11, as per MRV’s Air Quality and GHG Emissions Management Plan. The waste incinerator onshore at the waste management service provider’s facility will be used for thermal treatment of Project waste in order to sanitize it and incinerate project wastes, producing inert wastes.

Table 4.11: Air emission limits for heaters and boilers

Parameter	Emissions Guideline [mg/Nm ³] 3%O ₂
NO _x	460 mg/Nm ³ ⁽¹⁾
SO ₂	500 mg/Nm ³ ⁽²⁾ 2000 mg/Nm ³ ⁽¹⁾
PM	50 mg/Nm ³ ^(1,2)
H ₂ S	15 mg/Nm ³
Ni+V	2 mg/Nm ³ ⁽²⁾

References: ⁽¹⁾ IFC EHS General Guidelines. ⁽²⁾ Decree No. 18 of 2004, as amended by Decree No. 67 of 2010.

5 HSE and Sustainability Management

5.1 Health, Safety and Environment Integrated Management System Framework

MRV has developed a Health, Safety and Environment Integrated Management System (HSE IMS) which is applicable to all activities in Mozambique. Within this framework, the EMP and any other formal documentation produced as part of the Project will become part of the HSE IMS to assure that the identified requirements are applied and correctly managed.

The main pillars of this approach comprise the following:

- **Planning:** this stage requires that the management of HSE issues is defined, by identifying hazards and assessing HSE risks and opportunities, identifying and managing the applicable compliance obligations, defining objectives and planning activities to achieve these objectives;
- **Support:** this stage requires that a series of tangible and intangible means and resources are defined, required to implement the HSE process, with specific reference to the implementation and operation of activities to manage risks and impacts within their area of competence, such as training, information, education, awareness and competence, management of internal and external communication, management of documented information;
- **Operation:** this stage requires that all the activities required to effectively eliminate and/or reduce HSE risks and/or impacts and improve HSE performance are put in place, based on the assessments undertaken. These refer to actions aimed at mitigating and managing the risks and/or impacts for the environment and workers' health and safety (e.g., emergency management, change management, waste management), and actions aimed at managing the risks relating to HSE aspects that impact on the organization (e.g., corporate image, legal, asset integrity damages), as well as the procedures whereby the identified improvement objectives and opportunities are pursued;
- **Performance evaluation:** this stage includes the collection of data and information related to performance, controls, and verification on HSE processes, based on monitoring, audits and reviews;
- **Improvement:** this stage requires that opportunities for improvement are identified, with the analysis and management of HSE events, non-conformities, and corrective measures, and that the necessary action is undertaken to achieve the defined HSE outcomes.

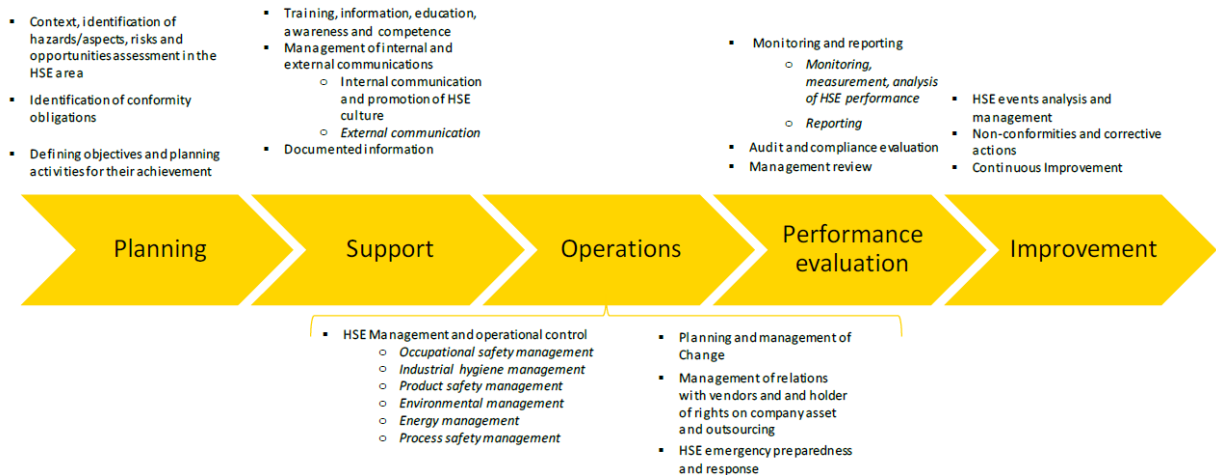


Figure 5.1: HSE IMS sub-processes, characteristics, and main operating procedures, as well as the associated roles and responsibilities

5.2 Sustainability Management System Framework

MRV has in place the Responsible and Sustainable Enterprise Management System Guideline (IMPRESSO MSG) aligned with the principles of International Standard Organization (ISO) 26000 Standard – Social Responsibility. In Mozambique, IMPRESSO MSG covers the sustainability activities carried out within MRV.

The IMPRESSO MSG defines the principles and practices within MRV to:

- Identify and regulate the phases, activities, information flows and main controls relative to the responsible and sustainable enterprise process;
- Establish the roles and responsibilities of the main parties involved;
- Define the rules of conduct and the principles to be observed in carrying out the described activities.

The main principles of this approach comprise the following:

- Accountability - an organization should be accountable for its impacts on society, the economy, and the environment;
- Transparency - an organization should be transparent in its decisions and activities that impact on society and the environment;
- Ethical behaviour - an organization should behave ethically;
- Respect for stakeholder interests - an organization should respect, consider, and respond to the interests of its stakeholders;
- Respect for the rule of the law - an organization should accept that respect for the rule of law is mandatory;
- Respect for international norms of behaviour - an organization should respect international norms of behaviour, while adhering to the principle of respect for the rule of law;
- Respect for human rights - an organization should respect human rights and recognize both their importance and their universality.

The IMPRESSO MSG is integrated with all the other documents that constitute the different management system Guideline namely:

- Responsible and Sustainable Enterprise – Annex C: - Grievance Mechanism;
- Responsible and Sustainable Enterprise - Annex D: Land Management;
- Responsible and Sustainable Enterprise - Annex E: Sustainability Stakeholder Engagement;
- Responsible and Sustainable Enterprise- Annex F: Respect and Promotion of Human Rights in Eni's activities;
- Responsible and Sustainable Enterprise - Annex G: Sustainability Reporting.

6 Labour and Working Conditions Policies and Procedures

As part of its Sustainability Framework, MRV complies with IFC PS 2 (Labour and Working Conditions). Specifically, MRV has adopted a series of labour and working conditions policies and procedures for the Coral North Project which are briefly listed below and described in the following subsections:

- Direct Workers:
 - Our People Policy;
 - Code of Ethics;
 - Working conditions and terms of employment;
 - Worker's organization;
 - Non-discrimination and equal opportunities;
 - Retrenchment;
 - Grievance mechanism;
 - Child labour;
 - Forced labour;
 - Occupational health and safety.
- Contracted Workers:
 - Workers engaged by third parties;
 - Supply chain.

6.1 Direct Workers

6.1.1 Human Resources Policies and Procedures

MRV has adopted a Code of Ethics that clearly defines the development and protection of human resources. People are the basic components of the company's life. MRV is committed to developing the abilities and skills of management and employees in order that their energy and creativity can have full expression to the fulfilment of their potential and working performance, especially as far as mental and physical health and dignity are concerned.

MRV adopts, in any situation, criteria of merit and ability in all decisions concerning human resources; it is also clearly stated and enforced that the selection, hire, training, compensation and management of human resources is done without any kind of discrimination. This is clearly reflected in day-to-day recruitment activities for employees. It also respects diversity by creating a working environment where personal characteristics or beliefs do not give rise to discrimination. The Recruitment and Selection Operating Instruction sets the methods for selection and recruitment of local and expat employees and the corresponding roles of the management in relation to the related activities.

In addition, MRV promotes a knowledge sharing culture and promotes values, principles, behaviours in terms of innovations in the professional families towards the company's sustainable growth.

The Training and Development Operating Instruction emphasizes employee development, enabling them to undertake various training programs with the support of their employer. These programs help enhance their current skills, acquire new ones, and prepare for roles with higher complexity and responsibility levels. Additionally, the plans provide autonomy and include development tools that help the company retain its employees, increase employee engagement and productivity, and ultimately improve overall business success.

MRV's Code of Ethics strictly prohibits harassment or mobbing in the workplace, by using severe penalty measures for those implicated in these activities.

In addition to the Code of Ethics, MRV's "Our People Policy" is based on the principle that people are the key factor for the existence of the organization. It also states that the Company is committed to upholding the rights recognized in the Universal Declaration of Human Rights, and encourages behaviour based on mutual respect and condemns all forms of harassment in workplace relations. It further states that the Company respects the dignity of each person and provides equal opportunities without any discrimination based on race, colour, religion, nationality, political preferences, sexual orientation, social status, age, or any other personal condition not relevant to the work requirements. It is further supported by Eni's Policy "Respect for Human Rights in Eni".

Furthermore, newly hired personnel undergo an induction process during their integration period. During that period, Human Resources explains all relevant contractual information to the new employee, including Contractors, in order that they are fully abreast of all contractual terms and conditions. This process is regulated by the Training and Development Operating Instruction.

The Human Resources MSG governs the phases and activities of the human resources management sub-processes and defines the rules of conduct and principles to be observed in the execution of the activities. This guideline also identifies the roles and responsibilities of the various subjects involved in the human resources process.

MRV conducts HSE training, which aim is to ensure that all MRV's personnel has the necessary know-how, expertise, and skills to carry out their activities from an effective HSE perspective.

6.1.2 Working Conditions and Terms of Employment

MRV has set in place an effective internal regulation that sets out, among other aspects, all working conditions and terms of employment for all employees. MRV is fully compliant with Mozambican labour law. In addition, MRV even surpasses the benefits assigned to employees under the law.

MRV also provides health insurance to all employees, with the goal of improving their quality of living and ensuring that the overall personal development objectives are met.

The use of appropriate methods to detect health concerns that may impact a person's ability to perform future work is regulated by the Fitness to Work Procedure. This procedure ensures that the assessment is carried out by a competent, employer-designated health professional in approved facilities, assures confidentiality mechanisms of medical data of the employee, and ensures compliant methods for the minimum requirements and standards fixed by the legislation and

regulations in force in Mozambique and industry standards. This procedure also requires the identification of health trends and determines employer health programs.

The directives and criteria for the administration and management of labour relationships with local employees are set by the Personnel Administration procedures in place. These procedures apply to two scenarios: offshore and/or Pemba (rotation) and Maputo/Pemba (residential).

Personnel and administrative issues related to the accommodation provided by the Company are regulated by the Living Quarter Management Protocol and Onshore Pemba Accommodation Management Plan. The Living Quarter Management Protocol applies to the FLNG living quarters, while the Onshore Pemba Accommodation Management Plan applies specifically to the Company's accommodation in Pemba.

The directives and criteria for business trips and offsite services, regulating the operational processes for booking, changing, and cancelling means of transport and accommodation are defined in the Business Travel and Off-Site Services Procedure. This procedure also regulates the operational and control activities, as well as measures and procedures for sending information, and the related traceability. The procedure establishes the roles and responsibilities of the subjects involved and guarantees uniformity of treatment for Company's non-managerial personnel.

6.1.3 Worker's Organizations

The Mozambican law recognizes worker rights to form and join worker organizations without any type of interference. MRV also recognizes worker's right to form and be part of worker organizations. In 2015, Eni Rovuma Basin (ERB - formerly Eni East Africa) workers created an internal union to represent the voice of employees which is currently still active. The workers' union representative was elected by the employees with no interference of the company. In addition, in case of elections of the union representative, the company provides conditions and a pleasant atmosphere for the process to run smoothly.

6.1.4 Non-Discrimination and Equal Opportunities

Employment decisions at MRV are based on merit, technical skills, experience, and open competition, and not on personal characteristics unrelated to inherent job requirements. Job vacancies are announced publicly in the media and all potential candidates are encouraged to apply. In addition, MRV always strives to provide opportunities for training and development without any sort of discrimination taking in consideration a fair needs assessment based on career development needs. Examples of training courses include: HSE, soft skills, language, compliance, sustainability, business and human rights, security and human rights, non-discrimination, among others.

MRV's Annex F to the Sustainable and Responsible Company Management System Guideline (Respect and Promotion of Human Rights in Eni Activities) was developed based on the United Nations Guiding Principles on Business and Human Rights, which recognize the responsibility of

companies to respect human rights. The Annex F contains a Human Rights Due Diligence, which indicates the standard of conduct to be used to prevent the occurrence of human rights violations in MRV. This standard is characterized by a process of identification, assessment, prevention, and management of negative impacts on human rights that the company can cause or contribute to through its activities and business relationships.

Human Rights Due Diligence includes monitoring and reporting on the process described and the effectiveness of the mitigation measures introduced.

MRV's commitment to the respect for human rights in its activities is expressed in the following corporate documents:

- Code of Ethics;
- Policy "Respect for Human Rights in Eni";
- Sustainability Policy;
- Global Framework Agreement on International Industrial Relations and Corporate Social Responsibility signed by Eni with the international trade union and the general secretariats of the national unions.

MRV's statement on the respect for human rights contains the following, among others: (i) the enunciation of the company's vision on human rights; (ii) a commitment to implement assessment, monitoring; reporting and communications on the respect for human rights in the company's processes.

MRV also possesses a human immunodeficiency virus and/or acquired immunodeficiency syndrome (HIV/AIDS) Policy in which MRV recognizes the magnitude and severity of the HIV/AIDS pandemic worldwide. The policy clearly states that (i) the company does not discriminate against employee(s) having, perceived as having, living or otherwise affected by HIV/AIDS (ii) HIV/AIDS screening should not be required for job applicants or persons in employment; (iii) The gender dimensions of HIV/AIDS should be recognized, i.e., its health effect and consequences on male and female, particularly in reproductive age; (iv) HIV/AIDS are dealt with the highest level of confidentiality as medical conditions, in accordance with applicable laws and company policies; (v) Should an employee wish to disclose that he/she is HIV positive, appropriate management through Company's Occupational Health and Medical Support programs will be offered and (vi) HIV/AIDS education and awareness will be made available to all employees, including contractors.

6.1.5 Retrenchment

No retrenchment measures are in place. MRV is well established and has a long-term presence in Mozambique. Thus, the company does not foresee any retrenchment of employees.

6.1.6 Whistleblowing Mechanism

MRV has in place a Whistleblowing System (which is part of the Anti-Corruption MSG) to ensure that all facts are reported while respecting all principles of confidentiality and professionalism. This system is also used as the MRV Workers' Grievance Mechanism.

The Whistleblowing Mechanism is the Annex C to the Internal Control and Risk Management System MSG and can be accessed by everyone through the Company's portal.

During the integration period, employees are provided with information on how to report events using the Whistleblowing Mechanism and to sign a Declaration of Awareness with the Whistleblowing Mechanism. This Declaration provides the following available channels to report events:

- Ordinary Mail;
- Fax number;
- Email;
- Local toll number;
- Eni website;
- Voicemail;
- Other alternative means.

These channels also ensure the anonymous nature of the Whistleblowing Report when it is important to preserve the identity of the person reporting it. Verbal description is not forbidden.

In addition, this information is also posted on the company's board in order that all employees are reminded of it any time when inside the Company's workplace. The Grievance and Disciplinary Procedure is available at the Company's intranet portal and communicated to all employees through email, on notice boards and during the HRO induction.

The whistleblowing committee is a cross-functional internal body, responsible of carrying out preliminary investigations with the classification of communications received to identify the whistleblowing reports that must be processed, as well as assess the presence of the necessary conditions in order to activate the subsequent verification phase. This committee is also charged with conducting the actual investigation, which consists of checking, analysing, and evaluating in detail the truthfulness of the facts reported as well as defining the recommendations for the adoption of the required corrective measures for the areas and company processes involved in the whistleblowing report.

6.1.7 Child Labour

MRV is fully compliant with the labour law of Mozambique with regards to child labour and MRV condemns any practice of exploitation of children.

6.1.8 Forced Labour

MRV employees are hired based on their voluntary willingness to join the company. There is no involuntary or compulsory labour.

6.1.9 Occupational Health and Safety

MRV has established a set of HSE management instruments, including plans, procedures, operating instructions, which consists of the following pillars: Pollution Prevention, Community, Workers, Emergency, and Activity Specific Actions. The emergency pillar, for example, consists of an Emergency Response Plan and Medical Emergency Response Plan. The Community pillar comprises a Stakeholder Engagement and Communication Plan. Pollution Prevention includes Air Quality and GHG emissions, Waste Management Plan, Effluents and Marine Discharge Management Plan, Project Standards and Emissions List. All of these are aimed at ensuring effective occupational health and safety.

6.2 Contracted Workers

6.2.1 Workers Engaged by Third Parties

MRV engages with Contractors that are well experienced in their areas of expertise with a considerable track record. These Contractors operate under the direction and in accordance with MRV requirements.

MRV obliges all Contractors and their subcontractors to declare conformity with applicable anticorruption regulations and HSE standards. All Contractors must declare adherence to the Code of Ethics and “Respect for Human Rights in Eni”.

People engaged by third parties can access the whistleblowing mechanism readily available on MRV’s intranet portal and posted on the notice boards in the Company’s workplace.

6.3 Supply Chain

MRV monitors its primary supply chain on an ongoing basis to identify any possible incompliance with the Code of Ethics, “Respect for Human Rights in Eni” Policy, or HSE policies, in particular risks or incidents of child and/or forced labour. MRV takes appropriate remedial measures in case incidents are identified, such as adding a clause that refers to human rights in the contracts.

Furthermore, all contracts have a mandatory clause on the right of audit which establishes the Contractor’s obligation to maintain records and documents pertaining to the Contract, for a defined period, and further obliges the Contractor to make such documents available upon request. Contract Holders are requested to monitor and guarantee strict adherence to the contract terms, to Eni Code

of Ethics, and labour legislation. Labour law compliance is assured through the implementation of the provisions foreseen in the Company's Post Award Contract Management procedure.

Where there is a safety risk related to supply chain workers, MRV introduces more stringent procedures and prevention measures, to ensure that primary suppliers within the supply chain are taking steps to prevent or to correct life-threatening situations.

MRV monitors suppliers and has in place a feedback system and database to record performance, in accordance with requirements defined in MRV procedures. Feedback is used to report contract performance to Contracts and Procurement department, for issuance of a caution, if required, and/or in the evaluation for future work.

7 Implementation of the EMP

This EMP shall be implemented during the Coral North Project planning, drilling, installation, commission, operation and decommission phases. The plan indicates the organization responsible for taking specific action and sets out parameters for monitoring the implementation of such action.

The EMP shall be issued for each major Project phase as follows and should be updated regularly, to reflect any Project change, specifically prior to the following relevant infield development activities:

- Drilling and completion of production wells;
- Installation of the FLNG;
- Commissioning of the FLNG;
- Operation and maintenance of the FLNG;
- Decommissioning.

In addition, the EMP shall be updated to reflect any major changes of the Project and/or if significant deficiencies are identified requiring new and/or improved mitigation measures. All EMP updates will be submitted to MAAP and other involved parties, as appropriate, for review and approval.

7.1 Coordination with Relevant Agencies

MRV will ensure that coordination is maintained with all relevant agencies dealing with E&S control management throughout the Coral North Project.

7.2 Roles and Responsibilities

7.2.1 Organogram

The following organogram shows the different roles and the official chain of communications proposed for the implementation of the EMP. The definition of key roles is provided in the following section.

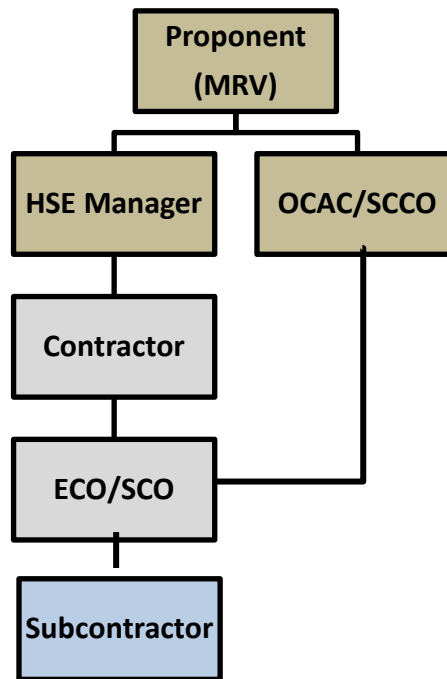


Figure 7.1: Roles and official chain of communications proposed for the implementation of the EMP

OCAC – Environmental Control and Communication Officer (*Oficial de Controlo Ambiental e Comunicação*), SCCO - Social Control and Communication Officer, ECO - Environmental Control Officer, and SCO - Social Control Officer.

7.2.2 Key Roles

MRV, the Proponent, will retain the ultimate responsibility for the conduct of the respective petroleum operations and all activities related to Coral North Project. The Proponent shall ensure implementation and ensure compliance with the EMP throughout the project phases. The Proponent may designate another party as the FLNG Operator to be responsible for the operations of the facility.

The Proponent may designate Contractors, working on their behalf, as responsible for the implementation of some management actions under the EMP such as during drilling and completion, vessel management, etc.; however, these activities will be under the direct supervision of the Proponent.

The E&S management of the Coral North Project will thus be dependent on the actions of the following key roles:

- Proponent – MRV will be responsible for ensuring that the Project is designed, installed, and operated in accordance with the requirements set out in this EMP. This will include the following main tasks:
 - Ensure that the Project’s detailed design undertaken by the Engineering Contractor abides by the recommendations provided in the EMP (see Chapter 8);

- Ensure that the Contractor(s) is fully aware of the E&S management requirements set out in this EMP;
- Supervise the Contractor(s) E&S performance, to ensure that all management requirements are implemented;
- Engage with the FLNG Operator, responsible for implementation of the EMP aboard the FLNG facility, to ensure that all requirements in the EMP are fully implemented;
- Submit periodic E&S performance reports to MAAP and other involved parties, as appropriate.
- FLNG Operator – responsible for operating the FLNG facility in compliance with the requirements set out in this EMP, including the following main tasks:
 - Ensure that the Contractor(s) is fully aware of the E&S management requirements set out in this EMP, through its inclusion in the tendering process;
 - Supervise the Contractor(s) E&S performance, to ensure that all management requirements are implemented;
 - Implement the EMP onboard the FLNG facility and support activities by Contractors;
 - Report HSE performance to the Proponent.
- Contractor(s) – responsible for implementing all mitigation actions and management procedures set out in this EMP that are applicable to their activities and subcontractors' activities.
- Regulatory Agencies.

The responsibilities of each of these key roles are described in greater detail in the following sections.

7.2.3 Roles and Responsibilities of Regulatory Agencies

Regulatory agencies directly concerned with the project include the following:

- Ministry of Agriculture, Environment and Fisheries (MAAP);
- National Environment Directorate (DINAB);
- National Agency for the Control of Environmental Quality (AQUA);
- Institute of Oceanography of Mozambique (InOM);
- National Institute of the Sea (INAMAR);
- National Petroleum Institute (INP); and
- Ministry of Transport and Logistics (MTL).

The roles and responsibilities of these organizations are as follows:

- MAAP is the designated authority responsible for approving the EIA and this EMP. MAAP has overall responsibility for ensuring that MRV complies with the term and conditions of its environmental license as well as this EMP. It is responsible for verifications, inspection, and audit before, during and after project implementation;
- DINAB is the MAAP-designated authority to monitor EIA applications at the national level, and will be responsible for review and approval of the EMP and its subsequent revisions;

- AQUA is the designated authority responsible for controlling environmental quality and is tasked, among other attributions, with the development and implementation of strategies for the integrated control of water, air, and soil pollution;
- InOM is the governmental agency responsible to ensure navigation safety and contribute to the development of scientific areas and preservation of the marine environment. It is also responsible for promoting national coordination and dissemination of notices to mariners;
- INAMAR is the Governmental Agency which deals with issues of maritime safety, protection of ships and port facilities, shipping, agency and stevedoring, the seafarers, the preservation of the marine environment and maritime administration. It is also responsible for warnings regarding ship and vessel movement;
- INP is the regulatory body of the oil and gas sector in Mozambique. INP is responsible for approving the start of operations for oil and gas installations, ensuring that operations are developed in compliance with regulation and with the approved development plans and to review, undertake regular inspections to the installations, and to review and approve reports submitted by the operators during their activities;
- MTL is the entity responsible for maritime transportations. It has a fair control over vessels circulation in Mozambique channels.

MRV and/or designated Contractor(s) will be responsible for all relevant clearances, permits, licences, and approvals from these bodies prior to commencing the onshore and offshore activities.

7.2.4 Roles and Responsibilities of the Proponent

Under Mozambican environmental legislation, the Proponent, MRV, is ultimately accountable for the overall compliance with the terms and conditions of the environmental license.

The Proponent has the responsibility of ensuring compliance with the terms and conditions of the environmental license and the implementation of EMP mitigation measures for the Project activities to be undertaken during the various project phases. The Proponent shall also be responsible for ensuring that all Project activities are carried out in accordance with its HSE requirements.

The Proponent will be responsible for the management of medical and health issues and the provision of appropriate care. The Proponent will ensure there are sufficient plans and resources in place for worker health care and contingency plans to respond to workplace accidents (an Emergency Response Plan).

As part of the normal operating and HSE procedures, the Proponent will undertake regular environmental, social, safety, and health audits and provide reports to enable monitoring and evaluating performance against the measures and objectives established in this EMP. The compliance audits are carried out according to the Proponent's auditing procedure; the frequency of audits is defined in the "HSE audit program" and updated on a yearly basis.

Once a year, MRV ensures that compliance audits are carried out by an external certified party to assess compliance of the project's onshore and offshore facilities and activities with the EMP requirements. Further details are provided in Section 10.2 "Auditing".

In order to ensure monitoring HSE compliance, the Proponent will designate the following roles and responsibilities:

The HSE Manager shall be responsible for:

- Defining HSE requirements during Contractor qualification and tender phases;
- Monitoring contractors' compliance with HSE and emergency requirements during Contract execution;
- Cascading to Contractors HSE initiatives and programs for improvement.

The HSE Supervisor and / or HSE focal point, shall be responsible for:

- Supervising on site Contractors' compliance with HSE requirements as specified in the Contract;
- Supporting the Company HSE Manager in ensuring Contractors' compliance with HSE Integrated Management system of Company and/or Contractor;
- Participating in audits and / or walkabouts and inspection activities;
- Monitoring of HSE Key Performance Indicators (KPIs) on site and reporting to HSE Manager;
- Participating in incidents investigations, monitoring of corrective actions implementation.

Supervision

The Proponent will work with Contractor(s) to achieve the required E&S performance. To this effect, the Proponent shall appoint an Environmental and/or Social Control and Communication Officer (OCAC and/or SCCO), responsible for monitoring Contractor(s) compliance with the EMP, including environmental management compliance audits.

The OCAC and/or SCCO shall have the following responsibilities:

- Ensure that the Contractor(s) is duly informed about the EMP as well as associated responsibilities and implications of this EMP prior to commencement of activities. To the effect, all necessary environmental and/or social documents will be included in tenders and expressions of interest;
- Inform key, on-site staff of their roles and responsibilities in terms of the EMP, through initial E&S awareness training (such as human rights specific training, supply chain, human resources, etc.);
- Ensure a copy of the EMP is available to employees and contractors involved of the Coral North Project and provide awareness sessions for the implementation of preventive and mitigation measures;
- Monitor, review and verify compliance with the EMP by the FLNG Operator and its Contractor(s), as well as any Sub-contractors and specialist contractors, if applicable;
- Identify areas of non-compliance and recommend remedial measures in consultation with the Proponent and Contractor(s), as required;

- Ensure that the FLNG Operator and its Contractor(s) remedy E&S problems in a timely manner and to the satisfaction of the Proponent and authorities (when necessary);
- Ensure method statements from the FLNG Operator and its Contractor(s) are fit for purpose prior to the start of relevant activities and gain approval with the relevant function (as appropriate) without causing undue delay to the Contractor(s);
- Ensure induction material includes Project appropriate E&S issues;
- Propose and review, on an as need basis, E&S training programs, and other awareness initiatives;
- Provide feedback for continual improvement in E&S performance;
- Respond to changes in project implementation or unanticipated site activities which are not addressed in the EMP, and which could potentially have E&S social impacts, and advise the Proponent and the Contractor(s) as required;
- Review, approve, and archive the EMP Performance Reports.

The OCAC and/or SCCO will also be responsible for evaluating compliance with stakeholder engagement, as set out in the Stakeholder Engagement and Communication Plan (SECP).

Grievance Management

MRV will also:

- Monitor and report on any Project activities that may negatively impact on communities;
- Facilitate ongoing, reciprocal information sharing and communication between the Project and impacted communities; including helping to resolve any Project-related issues raised;
- Support the Project's Grievance Mechanism (GM) by providing ongoing grievance procedure guidance and training to Project personnel, contractors and impacted communities and other relevant stakeholder groups (e.g., tourism industry stakeholders);
- Conduct regular inspections and note non-conformances with the Project's E&S requirements.

MRV shall designate a Grievance Officer (GO), who will be the point of contact for lodging of grievances and suggestions resulting from the Project. This role can be attributed to any member of the team and is not limited to an employee exclusively dedicated to managing grievances.

The GO shall have the following responsibilities, in the context of the GM:

- Receive and register grievances or complaints into the Grievance Register;
- Acknowledge and confirm of grievance handling;
- Explain the complaint resolution process to complainants;
- Conduct the first assessment of the complaint;
- Serve as the liaison between the complainant and MRV;
- Maintain up to date and generate reports from the Grievance Register.

7.2.5 Roles and Responsibilities of the FLNG Operator

The FLNG Operator will:

- Implement the EMP onboard the FLNG;
- Support activities by Contractors;
- Report HSE performance to MRV;
- Structure an organization comprising of staff with the necessary competences and skills;
- Submit periodic E&S performance reports to MAAP and other involved parties, as appropriate;
- Notify MAAP and other involved parties, as appropriate, about any material E&S incident, claim, material non-compliance with E&S requirements and implement a remedial E&S action plan.

The FLNG Operator ensures that the EMP (inclusive of the emergency plans) is effectively implemented onboard the FLNG by:

- Appointing the Environmental Officer;
- Conducting frequent walkabouts and regular maintenance and inspections;
- Carrying out environmental monitoring;
- Conducting emergency drills;
- Conducting inspections and audits.

7.2.6 Roles and Responsibilities of Contractor(s)

The Contractor(s) shall be responsible for implementation of all management actions outlined in this EMP and shall abide by the OCAC and/or SCCO's instructions regarding the implementation of the EMP.

The Contractor(s) shall name an Environmental Control Officer (ECO) and Social Control Officer (SCO) who shall report to the Proponent's OCAC and/or SCCO and ensure that the management actions set out in this EMP are complied with on a day-to-day basis. The ECO/SCO shall:

- Develop and/or cascade environmental awareness training and/or inductions for all new site personnel (e.g., posters, toolbox talks, signage);
- Ensure that all activities on site are undertaken in accordance with the EMP and develop implementation plans detailing the monitoring methods, parameters, and frequency to reflect the requirements of the EMP and submit them to the Company for review and approval;
- Undertake visual inspections of the activities of employees regarding implementation of the requirements outlined in the EMP;
- Immediately notify the OCAC and/or SCCO of any non-compliance with the EMP, or any other complaints or issues of environmental concern;
- Review and submit Method Statements to the OCAC and/or SCCO for approval;

- Keep site documentation related to environmental management on site (e.g., permits, EMP, environmental method statements, environmental license, reports, audits, receipts for waste removal, etc.);
- Keep records of all environmental incidents;
- Monitor and record the EMP Performance Indicators;
- Keep any records as required in the E&S management programs;
- Compile and submit the EMP Performance Reports to the OCAC/SCCO.

The SCO will ensure that all stakeholder engagement which is under Contractor responsibility is undertaken as per the SECP.

Additionally, the Contractor(s) has the following general responsibilities:

- Obtain all necessary licenses and permits to perform the activities under their scope of work and as per Company instruction;
- Obtain all the licenses and permits required for wastewater discharge as per Company instruction;
- Obtain all the licenses and permits required for handling, treatment, transport, and disposal of waste at final destination, as required and as per Company instruction;
- Comply with all relevant requirements included in the EMP;
- Allocate human and financial resources to implement the EMP. Ensure that all the necessary equipment (example, waste containers, safety equipment) and materials (example, spill kits) are available where needed;
- Provide E&S training to workers in accordance with the training program agreed and approved by Company;
- Carry out inspections to ensure compliance with this EMP;
- Be available to periodic environmental and/or social audits from Company and provide necessary information to do so;
- Ensure that Subcontractors, if any, comply with the EMP;
- Implement all necessary corrective measures. Keep records of incidents, accidents and community complains;
- Supervise subcontractor activities;
- Report all relevant grievance, incidents, and accidents to the Proponent.

To ensure Contractors' HSE compliance, the following roles and responsibilities shall be fulfilled:

- HSE Supervisor and/or HSE focal Point: support Contractor Site Representative in:
 - Ensuring compliance with HSE requirements as defined in the Contract of Services;
 - Reports to Company HSE manager Health and Safety KPIs;
 - Incident investigations, lessons learnt sharing, and corrective actions undertaken;
 - Implementation of Health and Safety initiatives and programs;
 - Health and Safety Non – conformity follow up to closure;
 - Ensure HSE risks are properly assessed, and proposed measures are implemented;
 - Communicate to Contractors' management HSE resources necessary to ensure that HSE requirements are met (e.g., PPE).

- Contractors' Site Representatives:
 - Responsible for ensuring compliance with HSE requirements as defined in the Contract of Services;
 - Responsible for incident investigations, Lessons Learnt sharing and following up on corrective actions;
 - Ensures HSE risks are properly assessed, and proposed measures are implemented.

8 Recommendations for Detailed Engineering

Following the Project's impact assessment, the EIS defines several recommendations for the detailed engineering phase, to be carried out by the Engineering Contractor in order to avoid or minimize negative impacts.

Table 8.1 summarizes the recommendations for the detailed engineering phase. The integration of these recommendations into the Project final design will be the responsibility of the Contractor engineering team, under the supervision and ultimate approval of the Proponent.

Table 8.1: Recommendations for the Detailed Engineering Phase

Project Component	Recommendation	Avoided or Mitigated Impacts
GHG	<ul style="list-style-type: none"> - Energy Efficiency: <ul style="list-style-type: none"> o Aero-derivative type gas turbine for mechanical drive purpose (refrigerant compressors) and for power generation with higher thermal efficiency; o Main power generation is supplemented with power supplied from one process driven liquid turbine generator connected to the electrical distribution network at the 6.6 kV level. Total energy recovery is estimated at a maximum of 1.5 MWe during full production; o Waste heat recovery - the installation of waste heat recovery units on the gas turbine exhaust stacks, to improve the waste heat utilisation; o Use of a combustor system technology to reduce NO_x emission installed in all gas turbines; o Use of molecular sieves for gas dehydration which uses fuel gas for regeneration of molecular sieve beds and spent moist fuel gas is again sent back to the fuel gas system thus avoiding any flaring; o Use of boil-off gas (BOG) in the facility as fuel rather than venting or flaring; o Transformer ratings selected to minimize losses by optimising ratings and thereby reducing the overall quantity of transformers; in addition to electrical requirements including switchgear fault levels and standardization considerations; o Low voltage motors are specified to meet the requirements of IEC IE2 high efficiency criteria. - Mitigation of fugitive emissions: <ul style="list-style-type: none"> o Fugitive loss prevention including BOG recovery, Leak, Detection and Repair Program (LDAR) system during operation, vapor emission control from condensate storage on the FLNG and during loading of condensate tankers; o Low-leak seals on all equipment servicing pipelines carrying hydrocarbon components (i.e., LNG compressors and pump seals). 	Avoid or reduce GHG emissions
Illumination on FLNG facility and other vessels	<ul style="list-style-type: none"> - FLNG lighting will be restricted to the minimum required for safety and security; - Whenever possible, directional lighting will be used to limit light spill (i.e., spread of light outwards from where it is needed into adjacent areas); - Consider the use of amber wavelengths. 	Avoid or reduce impacts on visual amenity and on avifauna and marine fauna

9 Environmental and Social Management Plans

This section of the EMP summarizes the E&S management plans to be implemented during the Coral North Project. These management plans summarize the mitigation measures as identified throughout the EIA process which need to be adhered to during the Project's implementation, and have been organized per Project phase and components, as follows:

- Drilling activities;
- Vessel movements;
- FLNG operations;
- Onshore logistic support activities; and
- E&S plans common to all Project activities.

9.1 Drilling Activities

This section of the EMP details environmental and social management requirements to be implemented during the drilling activities of the Coral North Project, as defined in the EIS. Management requirements for the drilling activities include the following aspects:

- Air quality and GHG emissions management;
- Effluent and marine discharges management;
- Biodiversity management;
- Archaeological chance finds procedure.

9.1.1 Air Quality and GHG Emissions Management

The goal is to ensure that suitable management and control measures are put in place to reduce and manage impacts related to airborne pollutants and GHG emissions from the Project's vessel drilling activities. Table 9.22 lists the control and mitigation measures to be implemented, to minimize impacts on air quality from the drilling activities.

Table 9.1: Environmental control and mitigation actions, description, and implementation schedule – air quality and GHG emissions from drilling activities

Control and Mitigation Actions	Description	Implementation Schedule	Responsibility for Implementation	Supervision
Control GHG emissions from well testing	<ul style="list-style-type: none"> - Monitor GHG emissions from process equipment; - Use compressor(s) and burner that ensure maximum clean burn capability with minimal smoke generation and fall-out. 	During drilling and completion activities	Contractor	ECO

9.1.2 Effluent and Marine Discharges Management

9.1.2.1 Justification and Objectives

The purpose of these management requirements is to ensure the conservation and integrity of the marine ecosystem in the Project's area of influence, during the drilling phase. The applicable standards are aligned with the Mozambican laws and regulations and international standards.

This section includes control and mitigation actions to protect the marine environment from potential environmental effects that may arise from the drilling activities, namely:

- Increased turbidity in the water column;
- Localized burial and smothering of benthic fauna and flora from drill cuttings;
- Toxic effects of hydrocarbons and chemicals on marine biota or changes in habitat characteristics;
- Physical coating or asphyxiation, or disruption of physiological or behavioural processes in marine biota by hydrocarbons;
- Localized increases in environmental nutrient loading;
- Localized reduction in water quality (e.g., including reduced dissolved oxygen and an increase in water temperature).

9.1.2.2 Proposed Actions and Implementation Schedule

Table 9.2 lists the control and mitigation measures to be applied, in order to minimize impacts on marine environment from effluents and discharges during the drilling phase.

Table 9.2: Environmental control and mitigation actions, description and implementation schedule – effluents and discharges management during the drilling phase

Control and mitigation actions	Description	Implementation schedule	Responsibility for implementation	Supervision
Equipment checks	- Read and implement pre-start readiness checks and frequent periodic inspections of equipment for operations with low toxicity oil-based muds (LTOBM).	During drilling activities with LTOBM	Contractor	ECO
Drilling fluids	- Use low toxicity water base muds (WBM) only, for the drilling of the initial well sections; - Use mud recovery systems for LTOBM; - Monitor and record the use of all drilling fluid components and other chemicals.	During drilling activities	Contractor	ECO
Drill cuttings treatment and disposal	- Collect all LTOBM cuttings and muds to the vessel and transport them onshore by supply vessels for treatment and disposal at a recognized landfill; - If an unplanned event prevents transfer of drilling wastes to shore, the drilling operation will be temporarily suspended until transfer to shore can be resumed; - Manage and discharge WBM and LTOBM mud and cuttings in compliance with international best practices.	During drilling activities	Contractor	ECO

9.1.2.3 Monitoring Actions

Table 9.3 summarises systematic and/or periodic verification actions and respective implementation schedule.

Table 9.3: Monitoring actions, description, and implementation schedule – effluents and discharges during the drilling phase

Monitoring action	Description	Implementation schedule	Responsibility for implementation	Supervision
Monitor treated drill cuttings	- Analyse treated drill cuttings to verify compliance with the standards specified in the approved Waste Management Plan for the Drilling and Completion Phase.	During drilling activities - prior to disposal	Contractor / MRV	ECO/OCAC
Bilge water and water from working areas	- Monitor oil content.	During drilling activities	Contractor / MRV	ECO/OCAC
Sewage	- Visually check the surroundings of sewage discharge point for signs of solids or oil; - Collect samples of sewage water after passing through the onboard sewage treatment system and before discharge into the sea.	During drilling activities	Contractor / MRV	ECO/OCAC

9.1.2.4 Performance and Reporting

Performance Indicators

Table 9.4 lists the following performance to be monitored for this management plan.

Table 9.4: Performance indicators for effluents and discharges management during the drilling phase

Performance Objectives	Targets	Key Performance Indicators
WBM and LTOBM to be used for drilling	Exclusive use of WBM and LTOBM for drilling	Records indicate that only WBM and LTBOM were used for drilling
Prevent onboard oil spills	Zero incidents of spilled hydrocarbons	Number of spills

Reports

The table below summarizes the documents that shall be prepared, archived, and maintained by MRV.

Table 9.5: Record of documents for effluents and discharges management during the drilling phase

Document Title	Document Type	Frequency of Record or Report
Register of onboard spills	Record	Immediately after any oil spill
Performance Report	Report	Biannual

9.1.3 Biodiversity Management

The drilling activities of the Coral North Project can result in impacts on biodiversity, which will require implementation of mitigation measures to reduce them to acceptable levels. Table 9.6 outlines the biodiversity management actions to be implemented during the Coral North drilling activities.

Table 9.6: Environmental control actions, description, and implementation schedule – biodiversity management during drilling

Control and mitigation actions	Description	Implementation schedule	Responsibility for implementation	Supervision
Minimize impacts of drilling on benthic fauna	- Undertake Remotely Operated Vehicle (ROV) inspection of the drilling sites prior to start of drilling. Adjust the exact drilling location, as much as possible, to avoid impacting any sensitive benthic community or habitat.	Prior to start of drilling campaign	MRV / Contractor	OCAC / ECO

9.1.4 Archaeological Chance Finds Procedure

9.1.4.1 Justification and Objectives

Extensive geophysical and bathymetric profiling has not identified the presence of an archaeological and/or cultural heritage find at or within the footprint of the Coral North location, and the likelihood of a feature at the water depth of 2,000m is extremely low. Nevertheless, the purpose of the Archaeological Chance Finds Procedure (CFP) is to provide MRV and Contractors with appropriate response guidelines in the event of a chance discovery of heritage resources, in accordance with national and international law, as well as best international practices based on the 1972 UNESCO Convention on the Protection of World Cultural and Natural Heritage and the International Council on Monuments and Sites (ICOMOS) Guideline on Heritage Impact Assessment.

Chance finds are defined as potential cultural heritage objects that are identified outside a formal site reconnaissance – by competent authorities and professionals – and encountered unexpectedly during project implementation.

These guidelines or CFP are incorporated into relevant MRV’s policies during the drilling operations or other subsequent phases of the project, and aim to:

- Avoid and/or reduce project risks that may result due to chance finds, whilst considering international best practice;
- Outline management measures, commitments, responsibilities, and monitoring actions in relation to Chance Finds for cultural heritage during drilling operations.







9.1.4.2 Proposed Actions and Implementation Schedule





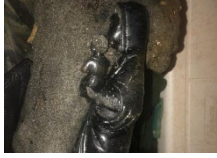
The following actions will be undertaken for the implementation of the CFP:

- ROV operators involved in the drilling and subsea installation activities will be trained to identify a chance find;

- Prior to drilling and/or the installation of the subsea infrastructure, an Autonomous Underwater Vehicle (AUV) or ROV will be used to examine the seabed;
- ROV imagery will be monitored and if a chance find is observed, the ROV operator will notify the offshore Company Representative;
- The Company Representative will assess the type of artefact and proceed with the initial record register and complete the check list (see an example of this checklist in Table 9.7);
- After the initial record register and check list is completed, the Company Representative will communicate with the HSE Manager who will in turn notify a registered archaeologist, stationed onshore;
- The relevance of the find will be assessed by the onshore archaeologist, who will determine if further assessment and mitigation measures are required.

Table 9.7: Guidance for chance finds – checklist

Name of cultural element	Image	Context of the finding (Surrounding)	Applicable Mitigation Measure	Location of finding (depth) + (Coordinates)	Description of finding (including chronology)	Finder's Name, company, position
Isolated Findings (e.g. Astrolabe)		(e.g., areas of sand layer and other CH elements described below)	(e.g. Rescue)	(e.g. 20 meters depth X latitude +Y longitude)	Bronze astrolabe possibly from 16th Century – Portuguese origin	
Ancient fishing trap						
Cannon						
Shipwreck						
Ballast stones						
Anchor						

Name of cultural element	Image	Context of the finding (Surrounding)	Applicable Mitigation Measure	Location of finding (depth) + (Coordinates)	Description of finding (including chronology)	Finder's Name, company, position
Canoe						
Multiple findings						
Coins						
Trade Beads						
Sculpture						
Others						

- Should the artefact or find be of extreme magnitude or importance, the responsible archaeologist, with support of the HSE Manager, shall immediately report the discovery to the competent national authorities (DNPC). This report shall contain the following information:
 - Date and time of the discovery;
 - Location of the discovery (GPS coordinates and project related reference);
 - Description of the discovery;
 - Significance of the discovery;
 - Estimated weight and dimensions, i.e., feasibility to move the discovery;
 - Estimated time needed to conduct removal of discovery (should it be required);
 - Recommendation of how to proceed;
 - Temporary protection measures to be implemented.
- If an important underwater archaeological site is detected, the drilling site and/or subsea installation route will be relocated to avoid the area. If relocation is not possible, rescue archaeological works will be planned and implemented as defined by the responsible archaeologist, on a case-by-case scenario, depending on the type and importance of the find;

- Different mitigation measures that may be considered for significant chance finds, includes the following:
 - *In situ* preservation which implies the relocation of the drilling sites;
 - Rescue excavations in advance of additional drilling work, should avoidance not be possible⁵;
 - If feasible, removal of artefact(s)/cultural site(s) deemed to be of high or moderate significance;
 - Execution of further excavation within a specified distance of the discovery point of site(s) deemed to be of high significance (if necessary);
 - Decision to continue with the work after all appropriate measures are taken into consideration.
- Regardless of whether the find is rescued or left *in situ*, the find shall be well documented, studied and registered in a proper database.

9.1.4.3 Reporting

The Company Representative will be required to maintain separate records of monitoring activities, chance finds, and chance find response measures. These records shall include:

- Daily monitoring records indicating areas and activities monitored; reported chance finds and the results of any evaluations. Communications and instructions (such as stop work and resume work) will also be included;
- Monthly reports summarising monitoring and evaluation results, status of any site treatment measures required, instructions to Company, and other internal and external communications. The CHM monthly Cultural Heritage Report should include a summary of:
 - Incidents of disturbance to known cultural heritage sites;
 - All cultural heritage sites identified through chance finds;
 - Management measures undertaken as a result of chance finds;
 - Number and results of verification inspections prescribed;
 - Performance Indicator as applicable in the reporting period.

All documentation will be supplied to MRV through a final report that will be prepared once any archaeological activities (including salvage programs, if they were needed) are complete. Should chance finds be identified or recovered, this report must be submitted to the DNPC as well.

9.2 Vessel Movements

This section of the EMP details environmental and social management requirements to be implemented for vessel movements, during all phases of the Coral North Project, as defined in the EIS. Management requirements for vessel movements include:

- Air quality and GHG emissions management;

⁵ Given that the proposed drilling sites are at a depth of approximately 2000 m, no archaeological excavation is recommended although the artefacts rescued should go through a complete process of desalinisation and first treatment in an adequate structure for later transfer into onshore facilities.

- Effluent and marine discharges management;
- Biodiversity management;
- Marine Navigation Management Plan.

9.2.1 Air Quality and GHG Emissions Management

The goal is to ensure that suitable management and control measures are put in place to reduce and manage impacts related to airborne pollutants and GHG emissions from the Project’s vessel movements. Table 9.22 lists the control and mitigation measures to be implemented, to minimize impacts on air quality from vessel movements.

Table 9.8: Environmental control and mitigation actions, description, and implementation schedule – air quality and GHG emissions from vessel movements

Control and Mitigation Actions	Description	Implementation Schedule	Responsibility for Implementation	Supervision
Control emission of air pollutants and GHG emissions from vessels	<ul style="list-style-type: none"> - Optimise supply and support operations and logistics to reduce fuel consumption from vessels and minimise air emissions; - Use vessels with Engine International Air Pollution Prevention (EIAPP) Certificate (the EIAPP certificate verifies the compliance with MARPOL air pollution requirements); - Use low sulphur fuels, in line with MARPOL convention; - Implement standard maintenance procedures of the project vessels’ engines and generators; - Record complaints relating to air quality in the complaints register. Review monthly, verify the legitimacy of the complaint, and if necessary identify measures required to reduce or remove complaints 	During all project phases	Contractor	ECO

9.2.2 Effluent and Marine Discharges

9.2.2.1 Justification and Objectives

The purpose of these management requirements is to ensure the conservation and integrity of the marine ecosystem in the Project’s area of influence, from effluents and discharges from Project vessels. The applicable standards are aligned with the Mozambican laws and regulations and international standards.

9.2.2.2 Proposed Actions and Implementation Schedule

Table 9.9 lists the control and mitigation measures to be applied, in order to minimize impacts on marine environment from effluents and discharges from vessel movements.

Table 9.9: Environmental control and mitigation actions, description and implementation schedule – management of vessel effluents

Control and mitigation actions	Description	Implementation schedule	Responsibility for implementation	Supervision
Adequate equipment, separation, and treatment facilities	<ul style="list-style-type: none"> - Maintain onboard spill response kits on all vessels in strategic locations; - Use drip trays to collect run-off and spills from equipment not contained within a bunded area and channel runoff to the closed drainage system; - Service and regularly maintain equipment to prevent incidental leaks; - Secure fuels, lubricants, hydrocarbon liquids and other chemical storage onsite by bunded facilities. 	Throughout Project life cycle	MRV / Contractor	ECO/OCAC
Ballast water management	<ul style="list-style-type: none"> - Discharge and loading of ballast water must comply with international and national legislation. Best international practices shall be followed. - Prepare and carry a vessel-specific Ballast Water Management Plan, in accordance with International Maritime Organization (IMO) and MARPOL standards, and include the following: <ul style="list-style-type: none"> o Local exchanges of ballast water can be done with no restrictions, following best practices; o Vessels carrying ballast water taken outside of Mozambican waters will abide by the following: <ul style="list-style-type: none"> ▪ No ballast activities will take place in the near shore area and over the continental shelf, being limited to deep offshore waters, at least 20 km from the planned FLNG site; ▪ Full ballast exchange shall be conducted outside Mozambique EEZ; ▪ If feasible, sterilize ballast water through filtration, heat treatments and/or de-oxygenation with nitrogen prior to discharge. 	<p>Throughout Project life cycle</p> <p>The ballast water management plan will be prepared prior to the Project vessel entering the Project area of operations</p>	MRV / Contractor	ECO/OCAC
Management of vessel wastewater	<ul style="list-style-type: none"> - Dispose liquid waste in accordance with MARPOL requirements and applicable standards; - Treat liquid effluents before discharge to the sea; - Comply with the project standards / emission limits for deck drainage, clean bilge water and treated sewage (see section 4); - Discharge effluents at no less than 5m below the surface; - Route water from machinery spaces to the closed drainage system, or contain 	Throughout Project life cycle	MRV / Contractor	ECO/OCAC

Control and mitigation actions	Description	Implementation schedule	Responsibility for implementation	Supervision
	and treat the bilge water before discharge; - Contain oil and chemical use areas and equipment (deck, mud tanks and pumps); - Use efficient oil and water separators; - Use vessels with International Sewage Pollution Prevention (ISPP) Certificate (the ISPP certificate verifies the sewage systems on board comply with MARPOL requirements); - Train crew members regarding the risks of contamination from deck water discharge and the importance of cleaning up spills as soon as they occur.			

9.2.2.3 Monitoring Actions

Table 9.10 summarises systematic and/or periodic verification actions and respective implementation schedule.

Table 9.10: Monitoring actions, description, and implementation schedule – management of vessel effluents

Monitoring action	Description	Implementation schedule	Responsibility for implementation	Supervision
Ballast water	- Register all ballast operations in a Ballast Water Record Book.	Throughout Project life cycle	MRV / Contractors	ECO/OCAC
Bilge water and water from working areas	- Monitor oil content.	Throughout Project life cycle	Contractor/MRV	ECO/OCAC
Monitor occurrence of on-board spills	- Hold daily house-keeping inspections to ensure that decks are kept clean; - Record all inspection routines and cleaning procedures.	Ongoing through daily operational log and incident reporting system	MRV / FLNG Operator / Contractors	ECO/OCAC
	- Record all accidental spills. Record the date, location, approximate volume of each spill and corrective measures implemented.	Whenever necessary	MRV / FLNG Operator / Contractors	ECO/OCAC

9.2.2.4 Performance and Reporting

Performance Indicators

Table 9.11 lists the following performance to be monitored for this management plan.

Table 9.11: Performance indicators for management of vessel effluents

Performance Objectives	Targets	Key Performance Indicators
Prevent onboard oil spills	Zero incidents of spilled hydrocarbons	Number of spills

Reports

The table below summarizes the documents that shall be maintained. These documents shall be prepared, archived, and maintained by MRV.

Table 9.12: Record of documents for management of vessel effluents

Document Title	Document Type	Frequency of Record or Report
Register of onboard spills	Record	Immediately after any oil spill
Vessels International Sewage Pollution Prevention Certificates	Certificate	Prior to mobilization
Performance Report	Report	Biannual

9.2.3 Biodiversity Management

9.2.3.1 Justification and Objectives

Vessel and helicopter movements can result in impacts on biodiversity, which will require the implementation of mitigation measures to reduce them to acceptable levels, as outlined in the following sections.

9.2.3.2 Proposed Actions and Implementation Schedule

The table below outlines the main biodiversity management actions applicable to the movement of Project vessels.

Table 9.13: Environmental control actions, description, and implementation schedule – biodiversity management for vessel movements

Control and mitigation actions	Description	Implementation schedule	Responsibility for implementation	Supervision
Helicopter and vessel movement activities	<ul style="list-style-type: none"> - Helicopters and support vessels in route between Pemba and the FLNG site to abide by the pre-defined Project route, defined to avoid ecological sensitive areas, namely the Quirimbas National Park (QNP) and St. Lazarus Bank; - All project related vessels and helicopters to maintain a minimum distance of 10 km from QNP and St. Lazarus Bank; - Avoidance of sensitive marine areas and receptors during transit (e.g. maintain 300 m exclusion zone from any marine mammals encountered during transit); - Restrict all flights to occur in daylight, unless for an emergency; - Ensure all operations abide by strict safety procedures to minimize risks; - Helicopter flights and vessel circulation to avoid bird flocks circulating at low heights, unless safety reasons override it; - Avoid bird gathering, feeding areas, or roosting areas on sea, unless safety reasons override it; - Helicopter operators to maintain a minimum height by visual assessment of pilot over bird foraging areas, unless safety reasons override it; 	Throughout Project life cycle	MRV / Contractor	ECO / OCAC

Control and mitigation actions	Description	Implementation schedule	Responsibility for implementation	Supervision
	<ul style="list-style-type: none"> - Implement accepted navigation measures, to ensure that helicopter and vessel movements are managed appropriately; - Ensure constant bridge watch is kept on all vessels when vessels are transiting between locations to identify cetaceans in potential danger of collision; - Record any marine mammal sightings; - Vessels to not knowingly approach within 300 m of whales or 50 m of dolphins, taking care to not split or disperse any group particularly groups with calves present; - If whales are observed within 300-100 m of vessel during transit, maintain or reduce speed and alter course away from the whales if safe to do so; - Reduce speed if whales are observed <100 m from vessel, to 'no wake speed' (<4 knots) and alter course away from the whales if safe to do so. 			
Daily activities on vessels	<ul style="list-style-type: none"> - Provide an illustrated and descriptive list of rare and conservation concern and important migrating seabird species to keep onboard; - Register injured birds found on vessels, rare or important for conservation, on a datasheet, and photograph if possible; - Register whenever a collision occurs, on a data sheet with date, weather conditions, photo, number of affected birds, other relevant observations and if possible, identify the bird group or species; - Consider having an on-board bird recovery area and developing response procedures for live and dead stranded birds if injured birds become a common occurrence; - Prohibit all crew members from killing or causing injury to seabirds. 	Throughout Project life cycle	MRV / Contractor	ECO / OCAC

9.2.3.3 Biofouling Management

The Project vessels that provide towing, piloting, mooring, and marine maintenance services shall have a vessel specific Biofouling Management Plan (as per IPIECA, 2010 and IMO, 2011) that describes the control and management measures for biofouling in order to minimize the transfer of invasive aquatic species. These measures include the following:

- Antifouling paint systems used on vessel component (i.e., underwater hull) comprised of a self-polished copolymer antifouling coating without tributyltin ;
- Each vessel to hold the following certificates and/or other documents for antifouling systems:
 - Detailed technical specification;
 - International certificate of antifouling system;
 - Technical file of class approved coating.
- Operation and maintenance of the antifouling system comprises the following activities:
 - In dry dock, paint service every 90 months and planned service of thrusters, sea chests, box coolers every 7.5 years;

- Cleaning and maintenance procedures in the water consider sea chest filters, firefighting system filters and water mist;
- Operation of onboard treatment processes, such as the Marine Growth Prevention System (MGPS), box coolers and the ballast water treatment plant.

Each vessel shall maintain a logbook detailing all inspections and biofouling management measures carried out on the vessel. The following activities shall be included in the logbook:

- After each dry docking, register and/or document hull cleaning and maintenance;
- When the hull area, fittings, niches, and voids below the waterline have been cleaned by divers;
- When the internal seawater cooling systems have been inspected and cleaned or treated;
- Maintenance and repairs of the MGPS;
- Periods of time when the ship was idle and/or inactive for an extended period of time;
- Periods of time when the ship was operating outside its normal operational profile;
- Details of official inspection or review of the ship’s biofouling risk;
- Any additional remarks and general remarks.

In addition, appropriate training shall be given in the application of biofouling management and treatment procedures. Training and awareness include the following topics:

- Logbook maintenance;
- Impacts of invasive aquatic species from vessel biofouling;
- Benefits to the vessel of biofouling management and the threats posed by non-application of management procedures;
- Biofouling management measures and associated safety procedure;
- Relevant health and safety issues.

9.2.3.4 Monitoring Actions

Biodiversity monitoring requirements for vessel activities are summarized in the following table.

Table 9.14: Monitoring actions, description, and implementation schedule

Monitoring action	Description	Frequency	Responsibility	Reporting
- Monitoring risk of collision with marine fauna;	- Record sightings from the vessels during transit;	Throughout Project life cycle	MRV / Contractors	Biannual report

9.2.3.5 Corrective Actions

If non-conformities are detected through monitoring actions, corrective actions should be implemented as required. The nature of these corrective actions or additional mitigation measures should be defined case by case, depending on the assessment of the specific issues. Examples where corrective actions may be required relate to the following:

- Regular or repeated incidence of marine fauna collisions requiring remedial measures (e.g., speed control measures);
- Inadequate implementation of the proposed control and mitigation actions.

After corrective actions have been taken, additional monitoring of the non-conformities may be required to verify resolution of the issues that have arisen. Table 9.15 indicates the main proposed corrective actions.

Table 9.15: Environmental corrective actions, description, and implementation schedule

Corrective Actions	Description	Implementation schedule	Responsibility for implementation	Supervision
Regular or repeated incidence of marine fauna collisions	Corrective action will include increased awareness of control measures and risks of marine fauna collisions, institution of additional measures such as acoustic monitoring (if not already in use).	Whenever necessary	ECO	OCAC

9.2.3.6 Performance and Reporting

Performance Indicators

Table 9.16 lists the performance indicators to be monitored.

Table 9.16: Performance indicators

Performance objectives	Targets	KPI
Avoid fauna collision	Zero incidents of fauna collision	Number of fauna collision

Reports

The table below summarizes the documents that shall be maintained. These documents shall be prepared, archived, and maintained by MRV.

Table 9.17: Documentation for biodiversity management for vessel movements

Document Title	Document Type	Frequency of Record or Report
Marine fauna collision incident reports	Incident Reports	Whenever necessary
Performance Report	Report	Biannual

9.2.4 Marine Navigation Management Plan

9.2.4.1 Justification and Objectives

The purpose of the Marine Navigation Management Plan is to ensure impacts on marine navigation are avoided. The program includes control and mitigation actions to ensure safe maritime navigation conditions in the Rovuma Basin, transit to site as well as around Pemba Port.

This program is based on international best practice for the offshore O&G industry, as required by the Regulation of Petroleum Operations (Decree No. 24/2004, of 30 August 2004).

9.2.4.2 Proposed Actions and Implementation Schedule

Table 9.18 lists the control and mitigation measures to be applied, in order to minimize impacts.

Table 9.18: Control and mitigation actions, description and implementation schedule – Marine Navigation Management Plan

Control and mitigation actions	Description	Implementation schedule	Responsibility for implementation	Supervision
Navigation in the Mozambique channel	<ul style="list-style-type: none"> - Safe and efficient navigation watch; - Consider daylight operations; - Strict application of ColReg; - Vet contracted vessel performance and crew for assurance; - Notify to the marine department, local authority, and port authority on the Company's logistics and supply chain activities; - Avoid transits during extreme wind and waves, and times of poor visibility; - Carry out regular safety audits and exercise drills. 	Throughout Project life cycle	Contractor / MRV	ECO / OCAC
Navigation near and at the Pemba port	<ul style="list-style-type: none"> - Monitor and register vessel traffic movements within port limits diligently maintained during increased traffic times; - Train staff involved in the handling of the vessels in the port; - Avoid transits during extreme wind and waves, and times of poor visibility; - Ensure competent and experienced marine crew; - Maintain a navigation safety critical elements register; - Provide a pre-entry / departure briefing, navigational audit; - Enable Master overriding authority; - Implement stop work authority policy; - Carry out regular safety audits and exercise drills; - Implement comprehensive Standard Operating Procedures providing guidelines and recommendations for UKC, port arrivals and departures and extreme weather events. 	Throughout Project life cycle	Contractor / MRV	ECO / OCAC
Risk of collision with fishing vessels near the Pemba port	<ul style="list-style-type: none"> - Ensure PSV operator is aware of the typical movements and schedules of local fishing vessels; - Maintain proper lookout as these vessels are often small and may be difficult to pick up visually or by vessel radar; - Avoid peak encounter times and times of restricted visibility; - Strict application of ColReg; - Carry out an early course alteration to avoid concentrated fishing area and vessels; - Provide additional bridge watchkeeping / higher level with additional OOW or assistant; - Engagement by Company and/or Logistics with local authority, fishery department, marine department on addressing issue, risk of fishing at traffic area and/or port area; 	Throughout Project life cycle	Contractor / MRV	ECO / OCAC

Control and mitigation actions	Description	Implementation schedule	Responsibility for implementation	Supervision
	<ul style="list-style-type: none"> - Local authority control and patrol, monitoring of fishing boats; - Provide safety awareness with fishermen. 			
Risk of collision at the Coral North operational site	<ul style="list-style-type: none"> - Maintain a safety zone of 500 m around the FLNG facilities and drilling rig; - Contact all vessels with closest point of approach within safety zone by VHF; - Transmit security level navigational warnings when conducting vessel operations at FLNG; - Strict application of ColReg; - Prohibit fishing within the FLNG safety zone; - Maintain an efficient navigation watch (lookout, radar, and AIS watch) on Project vessels; - Equip FLNG with fog signal, obstruction light; - Have guard tugs at FLNG available to force vessels to turn if on a collision course with FLNG. 	Throughout Project life cycle	Contractor / MRV	ECO / OCAC
Ensure safe maritime navigation conditions	<ul style="list-style-type: none"> - Install maritime warning systems on the vessel, including radar reflectors, lights, and fog horns; - Maintain all maritime equipment on board the project vessel in excellent working condition; - Stop shipping activities during the passing of a tropical storm or cyclone. 	Throughout Project life cycle	Contractor / MRV	ECO / OCAC
Communication with mariners	<ul style="list-style-type: none"> - Through InOM, communicate all project activities and location with mariners; - Issue a Notice to Mariners through InOM about the drilling activities. 	As required	Contractor / MRV	ECO / OCAC
	<ul style="list-style-type: none"> - Promote good communication between the pilot of Project vessels and the vessels sailing in the area. 	Throughout project life cycle	Contractor / MRV	ECO / OCAC
Train project personnel	<ul style="list-style-type: none"> - Ensure maritime staff on the Project vessels and facility are well trained and skilled in carrying out their responsibilities. Training must encompass both routine ship handling as well as emergency procedures such as detection and responses to spills or fires. 	Throughout project life cycle	Contractor / MRV	ECO / OCAC

9.2.4.3 Monitoring Actions

Table 9.19 summarizes the monitoring actions for the Marine Navigation Management Plan, including implementation schedule.

Table 9.19: Monitoring actions and implementation schedule – Marine Navigation Management Plan

Monitoring action	Description	Implementation schedule	Responsibility for implementation	Supervision
Monitor approaching vessels and	<ul style="list-style-type: none"> - Perform continuous watch keeping on the bridge of the Project vessels, monitor approaching vessel traffic and issue radio warnings if such a vessel 	Throughout Project life cycle	Contractor / MRV	ECO / OCAC

Monitoring action	Description	Implementation schedule	Responsibility for implementation	Supervision
issue warnings	would be on a (near-)collision course or on a course through the promulgated safety zone.			

9.2.4.4 Corrective Actions

Table 9.20 summarizes corrective actions for the Marine Navigation Management Plan, including implementation schedule.

Table 9.20: Corrective actions and implementation schedule – Marine Navigation Management Plan

Corrective Actions	Description	Implementation Schedule	Responsibility for Implementation	Supervision
Critical maritime situations	<ul style="list-style-type: none"> - Keep a logbook on critical maritime situations, evaluate these regularly and recommend ways to reduce maritime risks; - Provide regular feed back to the Mozambican authorities about the maritime conditions around the Project vessels and facility 	Throughout Project life cycle	Contractor / MRV	ECO / OCAC

9.2.4.5 Performance and Reporting

Performance Indicators

The following performance indicators will be monitored:

- Number of complaints from mariners;
- Number and types of critical maritime situations.

The performance indicators results should be determined monthly and compiled in quarterly reports, as indicated in the following section.

Reports

Table 9.21 summarizes the documents that will be maintained for this management program. These documents will be prepared, archived, and maintained to document the results of the program implementation. Records of relevant events should be made following the occurrence, and performance information should be included in the biannual E&S performance reports.

Table 9.21: Documentation under the Maritime Navigation Management Program

Document Title	Type of Document	Frequency of Record or Report
Record of complaints from mariners	Record	Whenever necessary
Record of critical maritime situations	Record	Whenever necessary
Performance Report	Report	Biannual

9.3 FLNG Operations

This section of the EMP details environmental and social management requirements to be implemented for the FLNG operations, as defined in the EIS. Management plans for FLNG operation include the following:

- Air Quality and GHG Emissions Management Plan;
- Flaring Minimization Plan;
- Effluent and Marine Discharges Management Plan;
- Naturally Occurring Radioactive Materials Management Plan;
- Biodiversity Management Plan;
- Industrial Hygiene Monitoring Plan;
- Chemicals Management Program

9.3.1 Air Quality and GHG Emissions Management Plan

9.3.1.1 Justification and Objectives

One of the key objectives of the Air Quality and GHG Management Plan (AQGHGMP) is to avoid or minimise as much as possible any negative impacts identified, thus avoiding damage to the environment.

The AQGHGMP aims at ensuring that suitable management and control measures are in place to reduce and manage impacts related to airborne pollutants and GHG emissions from the FLNG operations.

The specific objectives of the AQGHGMP are to:

- Identify Project airborne pollutants and GHG sources;
- Outline management and mitigation measures to be implemented by the Project to minimize impacts on air quality to As Low As Reasonably Practicable (ALARP) and to comply with relevant standards and guidelines relating to atmospheric emissions and ambient air quality;
- Outline a GHG management strategy on reporting and reduction measures according with international standards;
- Ensure the Project complies with international good practice regarding the maintenance of machinery and equipment and good operational management; and
- Identify monitoring locations and define compliance evaluation and response procedures.

The following section summarizes the control and mitigation actions and the monitoring program described in the AQGHGMP.

9.3.1.2 Proposed Actions and Implementation Schedule

Table 9.22 lists the control and mitigation measures to be implemented, to minimize impacts on air quality from FLNG Operations.

Table 9.22: Environmental control and mitigation actions, description, and implementation schedule – AQHGMP for FLNG Operations

Control and Mitigation Actions	Description	Implementation Schedule	Responsibility for Implementation	Supervision
Control GHG emissions from commissioning & start-up	- Monitor GHG emissions from operations and process equipment.	During commissioning & start-up activities	Contractor	ECO
Control emission of air pollutants from all combustion sources	- Record complaints relating to air quality in the complaints register. Review monthly, verify the legitimacy of the complaint, and if necessary, identify measures required to reduce or remove complaints.	Throughout operational lifetime	MRV / FLNG Operator / Contractor	OCAC/SCCO and ECO
Control emission of air pollutants from compression turbines and turbine generators	- Optimize stack height to achieve sufficient dispersion, in line with Good International Industry Practice; - Use of low NO _x burners; - Use of Dry Low NO _x with water or steam injection.	Prior to operation	FLNG Operator / Contractor	ECO
	- Install turbines to best available technology (BAT) specification.	During commissioning	FLNG Operator / Contractor	ECO
	- Undertake periodic monitoring to optimize performance and ensure compliance with emission limits.	Annual emissions monitoring during operations		
	- Undertake maintenance in line with manufacturer recommendation	Throughout operational lifetime		
Control emission of air pollutants from diesel engines	- Require the EIAPP certificate; - Ensure compliance of generators with international standards to ensure efficiency and good performance.	Prior to operation	FLNG Operator / Contractor	ECO
Control emission of GHG and air pollutants from flaring	- Commitment to zero routine flaring; - Manage maintenance, shutdowns, start-ups, and depressurization to minimize flaring; - Use of BOG compressors to manage vapours from FLNG tanks and vessels during loading to avoid use of flaring; - Use of knock-out drum to capture liquids during flaring events; - Reduce the quantity of gas to burn by careful process management; - Use the flaring as a safety system and in non-routine activities (e.g., plant shutdowns); - Minimize flaring with an appropriate combination of: <ul style="list-style-type: none"> o Control the use of fuel gas; o Use of high integrity valves; o Advanced process control. 	Prior to operation, and throughout operational lifetime	FLNG Operator / Contractor	OCAC/SCCO and ECO
Control emission of air pollutants from flaring	- Implement good industry practices, operational plans and procedures aimed at reducing the probability of	Prior to operation, and throughout operational lifetime	FLNG Operator / Contractor	OCAC/SCCO and ECO

Control and Mitigation Actions	Description	Implementation Schedule	Responsibility for Implementation	Supervision
during unplanned events	<ul style="list-style-type: none"> occurrence of unplanned events and maximizing flare effectiveness; - Optimize combustion conditions; - Minimize flaring from purges and pilots: purge gas reduction devices; vapor recovery; soft seat valves; and conservation technology; - Minimize pilot blow our risk by ensuring exit velocity and provision of wind guards; - Use reliable pilot ignition systems; - Install high integrity pressure protection systems; - Operate flare to minimize visible smoke; - Implement burner maintenance program; - Meter flare gas. 			
Control emission of air pollutants from venting during routine operations	<ul style="list-style-type: none"> - Use of BOG compressors to manage vapours from FLNG tanks, vessels, and other venting points to avoid use of venting. 	Throughout operational lifetime	FLNG Operator / Contractor	OCAC/SCCO and ECO
Control emission of air pollutants from fugitive emissions during routine operations	<ul style="list-style-type: none"> - Use of LDAR maintenance program; - Use of high sealing covers and seal maintenance; - Suitable design of valves, flanges, fittings, and seals. 	Throughout operational lifetime	FLNG Operator / Contractor	OCAC/SCCO and ECO
Use of cooling agents / refrigerants (with high Global Warming Potential)	<ul style="list-style-type: none"> - Avoid and/or minimise the use of refrigerants with high global warming potential; - Maintain inventory of refrigerants in use. 	Prior to operation, and throughout operational lifetime	FLNG Operator / Contractor	OCAC/SCCO and ECO

9.3.1.3 Monitoring Actions

Table 9.23 lists the monitoring program to be implemented during the operational phase. If the monitoring surveys detect either higher emissions than expected or relevant impacts on ambient air quality, the causes for those impacts will be investigated and relevant mitigation implemented, to be defined on a case by case, as part of an adaptive management process.

Table 9.23: Air quality and GHG monitoring program during operational phase

Aspect	Monitoring Location	Parameters	Frequency	Responsibility	Required Staff Qualifications
Meteorological data	- Aboard the FLNG.	- Temperature, wind, rainfall, height of cloud layers and visibility.	Daily	ECO under OCAC supervision	AQ Monitoring

Aspect	Monitoring Location	Parameters	Frequency	Responsibility	Required Staff Qualifications
Stack emission monitoring	- MR1 gas turbine compressor (GTC) through WHRU; - Exhaust from MR2 compressor gas turbine.	- Moisture; - O ₂ wet and dry; - NO _x .	Continuous	ECO under OCAC supervision	Stack testing
	- Gas turbine generator (GTG) through WHRU.	- O ₂ wet and dry; - NO _x .			
	- Essential diesel generator (EDG).	- O ₂ wet and dry; - NO _x ; - SO _x and CO.			
	- All flares.	- Flow rate (cumulative).			
Stack emission monitoring	- GTG through WHRU; - MR1 GTC through WHRU; - Exhaust from MR2 GTC.	- Flow rate, temperature, O ₂ , humidity, NO _x , SO _x , CO, and PM.	Annually	ECO or contracted Party under OCAC supervision	Stack testing
	- Carbon dioxide (CO ₂) thermal incinerator	- Temperature, flow rate, humidity, O ₂ , NO _x , SO _x , PM, H ₂ S, benzene, toluene, ethylbenzene, xylene, Ni + V, methane (CH ₄)			
	- All flares	- Flow rate, flare opacity			
Fugitive VOC emissions	- Pumps, valves, connectors, open ended lines, and sampling connections.	- VOCs, hydrocarbons.	Annually	ECO or contracted Party under OCAC supervision	Air quality monitoring
Ambient air quality	- FLNG residential area.	- NO _x , CO, sulphur dioxide (SO ₂), total suspended particles (TSP), benzene			
GHG Emissions (scope 1)	- GTCs and GTGs; - EDG and emergency diesel generator; - Stack; - Valves, flanges, etc. (fugitive); - CO ₂ thermal incinerator (venting).	- Fuel gas consumption, marine gasoil (MGO) consumption, gas volume to flare, gas composition, gas leaks, CO ₂ in inlet gas	Monthly	MRV / FLNG Operator	GHG Accounting
	- Marine vessels; - Aircraft; - Land vehicles.	- MGO consumption, fuel consumption, diesel consumption.	Monthly	MRV / FLNG Operator / Contractors	GHG Accounting

Aspect	Monitoring Location	Parameters	Frequency	Responsibility	Required Staff Qualifications
GHG Emissions (scope 1)	- Warehouse	- Diesel consumption.	Monthly	MRV / FLNG Operator	GHG Accounting
GHG Emissions (scope 2)	- Warehouse	- Energy use.	Monthly	MRV / FLNG Operator / Contractors	GHG Accounting

MRV is responsible to maintain the Project's GHG inventory composed of scope 1 and 2 emissions. It includes the total emissions in CO_{2eq} and carbon intensity calculated based on Intergovernmental Panel on Climate Change (IPCC) Global Warming Potential (GWP). GHG emissions monitoring will include the accounting of methane emissions. Regular GHG reporting to the relevant authorities and other involved parties as appropriate shall be conducted by MRV and FLNG Operator, respectively, as part of the Project's E&S performance report, in line with the UNFCCC reporting guidelines.

9.3.2 Flaring Minimization Plan

The objective of the Flaring Minimization Plan is to describe the design philosophy, engineering solutions, and operation strategies adopted for the Coral North Project to minimize flaring during startup and operations.

9.3.2.1 Legislation and Regulations

The Flaring Minimization Plan will be developed in alignment with the following standards:

- IFC EHS Guidelines for Offshore O&G Developments (06/2015);
- Global Gas Flaring and Venting Reduction Voluntary Standard (05/2004);
- Coral North Development Project codes and Standards;
- Api Standard 537 – Flare Detail for Petroleum, Petrochemical, and Natural Gas Industries;
- Api Standard 521 – Pressure-relieving and Depressuring Systems.

9.3.2.2 Objectives

The objectives of the Flaring Minimization Plan include the following:

- Source gas reduction measures to the extent possible;
- Efficient use and optimization of flare tips and number of burning nozzles;
- Maximize flare combustion efficiency;
- Minimize flaring from purges and pilots without compromising safety ;
- Minimize risk of pilot blowout;
- Use reliable pilot ignition system;
- Reduce overpressure events, avoid, or reduce flaring situations;
- Minimize liquid carryover and entrainment in the gas flare stream;
- Minimize flame lift off and/or flame lick;
- Control odour and visible smoke emissions;
- Ensure safe distance of flare from accommodation units;

- Ensure continuous maximum flare efficiency;
- Meter flare gas.

9.3.2.3 Flare Performance Goals and Targets

The operation of Coral North FLNG aims to avoid gaseous emissions in order to meet the Project target of zero routine flaring. The zero flaring concept encompasses the operation of the facility to avoid flaring beyond the strictly necessary to keep the plant operation safe. Therefore, exceptions are made to:

- Flare pilots which are required to be kept continuously on, not to compromise safety and ensure that, in case of need, all discharge gases to flare are fully combusted;
- Rotating equipment's mechanical seal vents to flare;
- Emergency situations or during trips of key equipment which may require partial or full plant depressurizations through the flare;
- Transient scenarios; when the plant is not able to liquefy all feed gas due to potential off-design operations, fluid composition, and/or LNG offloading limitations, etc.;
- Facility start-up scenarios; when facility is not able to liquefy all feed gas, i.e., prior to liquefaction unit cooldown. This also includes restarting the facility after preventive and/or corrective maintenance shutdown.

9.3.3 Effluent and Marine Discharges Management Plan

9.3.3.1 Justification and Objectives

The purpose of the Effluent and Marine Discharge Management Plan (EMDMP) is to ensure the conservation and integrity of the marine ecosystem in the Project's area of influence. The applicable standards are aligned with the Mozambican laws and regulations and international standards. All the operational discharges during the Project's operations will comply with the standards presented in Section 4.

If it becomes necessary to utilize treatment chemicals for the purpose of meeting these standards for discharges, the concentration of chemicals in the effluent shall adhere to the limit specified for the receiving environment, as outlined in the product's Material Safety Data Sheet (MSDS). This will be achieved by applying the minimum dilution factor determined through the discharge modelling study specific for the Coral North FLNG effluents.

Effluents which cannot be discharged into the sea in compliance with the environmental standards shall be retained onboard for subsequent transfer to onshore treatment facilities for treatment and disposal. The discharge limits listed in Section 4 are applicable to the offshore discharge of liquid effluents. Onshore disposal of liquid waste transported for onshore treatment will comply with the national regulatory emission limits for onshore discharges.

This plan includes control and mitigation actions to protect the marine environment from potential environmental effects that may arise from the project activities, namely:

- Toxic effects of hydrocarbons and chemicals on marine biota or changes in habitat characteristics;
- Localized increases in environmental nutrient loading;
- Localized reduction in water quality (e.g., including reduced dissolved oxygen and an increase in water temperature).

9.3.3.2 Proposed Actions and Implementation Schedule

Table 9.24 lists the control and mitigation measures to be applied, in order to minimize impacts on marine environment from the FLNG’s effluents and discharges.

Table 9.24: Environmental control and mitigation actions, description, and implementation schedule – EMDMP

Control and mitigation actions	Description	Implementation schedule	Responsibility for implementation	Supervision
Adequate equipment, separation	<ul style="list-style-type: none"> - Maintain onboard spill response kits in strategic locations; - Establish separate drainage systems for hydrocarbon-contaminated water (closed drains) and water from non-process areas (open drains); - Bund all process areas to prevent contamination by storm waters, contain spills and leaks, and channel drainage water into the closed drains; - Use drip trays to collect run-off and spills from equipment not contained within a banded area and channel runoff to the closed drainage system; - Service and regularly maintain equipment to prevent incidental leaks; - Secure fuels, lubricants, hydrocarbon liquids and other chemical storage onsite by banded facilities. 	Throughout Project life cycle	FLNG Operator / Contractor	ECO/OCAC
Ballast water	<ul style="list-style-type: none"> - Discharge and loading of ballast water must comply with international and national legislation (full exchange outside of the Mozambique EEZ). Best international practices have to be followed; - Hold an International Ballast Water Management Certificate. 	Prior to installation	FLNG Operator / Contractor	OCAC
Sewage and bilge water	<ul style="list-style-type: none"> - Dispose liquid waste in accordance with MARPOL requirements and applicable standards; - Treat liquid effluents before discharge to the sea; - Comply with the project standards / emission limits for deck drainage, clean bilge water and treated sewage (see section 4); - Discharge effluents at no less than 5m below the surface; 	Throughout Project life cycle	FLNG Operator / Contractor	ECO/OCAC

Control and mitigation actions	Description	Implementation schedule	Responsibility for implementation	Supervision
	<ul style="list-style-type: none"> - Route water from machinery spaces to the closed drainage system, or contain and treat the bilge water before discharge; - Contain oil and chemical use areas and equipment (deck, mud tanks and pumps); - Use efficient oil and water separators; - Train crew members regarding the risks of contamination from deck water discharge and the importance of cleaning up spills as soon as they occur. 			
Produced water management	<ul style="list-style-type: none"> - Treat production water in a treatment package, prior to discharge into the sea; - Comply with project emission limits for discharged treated produced water; - Discharge effluent at a depth of at least 5m, with a 4-inch or smaller pipe end diameter; - Maintain the correct operation of the treatment system, to maintain designed discharge concentrations; - Operate the treatment system following best practices and international standards. This includes maintaining trained operating staff as well as enforcement of all operating policies and procedures. 	Operation	FLNG Operator / Contractor	ECO/OCAC
On spec slop and bilge streams, sea water rejects, fire water, jockey pump water, IGG scrubber	<ul style="list-style-type: none"> - Comply with applicable standards for discharges. 	Operation	FLNG Operator / Contractor	ECO/OCAC
Cooling water	<ul style="list-style-type: none"> - Maintain correct operation of the cooling system, to maintain designed discharge temperatures; - Operate cooling system as per best practices and international standards, including maintaining trained operating staff as well as enforcement of all operating policies and procedures; - Ensure that the pumping of cooling water through the system is turned off when cooling is not required. 	Operation	FLNG Operator / Contractor	ECO/OCAC
Organic waste management	<ul style="list-style-type: none"> - Treat kitchen waste in accordance with MARPOL (73/78) regulations: food waste macerated to <25 mm and discharged to sea. 	Operation	FLNG Operator / Contractor	ECO/OCAC

9.3.3.3 Monitoring Actions

Table 9.25 summarises systematic and/or periodic verification actions and respective implementation schedule.

Table 9.25: Monitoring actions, description, and implementation schedule – EMDMP

Monitoring action	Description	Implementation schedule	Responsibility for implementation	Supervision
Ambient water quality monitoring (outside the recommended mixing zone of 300 m)	- Monitor biannually the receiving seawater quality, to verify compliance with ambient quality standards (see Table 9.26).	Biannually (see Table 9.26)	FLNG Operator	ECO / OCAC
Produced water effluent	- Monitor periodically the produced water effluent, to verify compliance with emission limits (see Table 9.26).	Monthly (see Table 9.26)	FLNG Operator	ECO/OCAC
Cooling water	- Monitor continuously the discharge temperature (see Table 9.26).	Continuous, during operation (see Table 9.26)	FLNG Operator	ECO/OCAC
Bilge water	- Carry out periodic monitoring of bilge water	Monthly (see Table 9.26)	FLNG Operator	ECO/OCAC
Domestic wastewater	- Carry out periodic monitoring of treated wastewater from domestic area and treated galley water.	Monthly (see Table 9.26)	FLNG Operator	ECO/OCAC
Hazardous open drains & surface drains for non-cryogenic areas Closed drains Equipment cleaning water	- Carry out periodic monitoring of drainage.	Monthly (see Table 9.26)	FLNG Operator	ECO/OCAC

Table 9.26 below lists the monitoring program to be implemented in the operations phase.

Table 9.26: FLNG monitoring program for the operations phase – EMDMP

Aspect	Monitoring location	Continuous readings	Onboard laboratory (monthly analysis)	External laboratory (quarterly analysis)
Treated hazardous open drains & Surface drains for non-cryogenic areas Treated closed drains Equipment cleaning water	At slop tank outlet	- Flow rate; - Oil content; - pH.	- pH; - Oil & grease.	- pH; - Oil & grease.
Bilge water	At treatment outlet	- Flow rate; - Oil content; - pH.	- pH; - Oil & grease.	- pH; - Oil & grease.

Aspect	Monitoring location	Continuous readings	Onboard laboratory (monthly analysis)	External laboratory (quarterly analysis)
Treated wastewater from domestic area, treated galley water	At treatment outlet	- Flow rate; - pH; - Temperature.	- pH; - Total Suspended Solids (TSS); - Biological Oxygen Demand (BOD5); - Chemical Oxygen Demand (COD); - Total Nitrogen.	- TSS; - BOD5; - COD; - Total Nitrogen; - Total coliforms.
Treated produced water, treated effluent from MEG regeneration & reclamation package	At treatment outlet	- Flow rate; - Oil content; - Temperature.	- pH; - Oil & grease; - Phenol.	- pH; - Oil & grease; - Phenol.
Cooling water, seawater rejects	At main cooling water loop outlet At main sea water rejects / essential sea water rejects	- Temperature.	- Free chlorine.	-
	At fire water system, jockey pump water system	- None.	- Free chlorine.	-
Aspect	Monitoring location	<i>In situ</i> reading	Onboard laboratory	External laboratory (biannual)
Sea water quality monitoring	Outside the recommended mixing zone of 300 m	- Temperature; - pH; - Conductivity / salinity - Dissolved oxygen; - Turbidity - Chlorophyll a.	Water samples - all stations: - Biochemical oxygen demand (BOD) - Chemical oxygen demand (COD) - Total coliforms - Faecal coliforms	- Total organic carbon; - Total dissolved solids; - Total nitrogen; - Ammoniacal nitrogen; - Nitrites; - Nitrates; - Phosphorus; - Phosphates; - Total phenols; - Polycyclic aromatic hydrocarbons; - THC; - Metals (Al, As, Pb, Cu, Cd, Cr, Hg, Ni, Ba, Co, Fe, Se, Zn).

9.3.3.4 Performance and Reporting

Performance Indicators

Table 9.27 lists the following performance indicators to be monitored.

Table 9.27: Performance indicators for the EMDMP

Performance Objectives	Targets	Key Performance Indicators
Prevent onboard oil spills	Zero incidents of spilled hydrocarbons	Number of spills

Performance Objectives	Targets	Key Performance Indicators
Prevent exceedances in effluent emission and receiving water quality standards	Zero exceedances	Number of exceedances

Reports

The table below summarizes the documents that shall be maintained. These documents shall be prepared, archived, and maintained by MRV.

Table 9.28: Documentation for the EMDMP

Document Title	Document Type	Frequency of Record or Report
Register of onboard spills	Record	Immediately after any oil spill
Water quality monitoring	Report	Biannually
Performance Report	Report	Biannual

9.3.4 Naturally Occurring Radioactive Materials Management Plan

9.3.4.1 Justification and Objectives

The objective of the Naturally Occurring Radioactive Materials (NORM) Management Plan is to provide instructions and minimum requirements for the identification, management, and disposal of Naturally Occurring Radioactive Materials and Technologically Enhanced Naturally Occurring Radioactive Material (TENORM) associated with the operations of the FLNG facility.

The NORM Management Plan covers activities that may lead to the accumulation of residues with detectable radiometric characteristics and higher than the environmental background of radiation on the FLNG facility, due to the potential presence of NORM and TENORM in the production process. The NORM Management Plan applies to the Company employees and Contractors.

All NORM surveys must be documented and conducted by the Radiation Protection Officer (RPO) onboard the FLNG facility. Surveys and laboratory reports must be provided to the Offshore HSE Manager, Production Manager, and Offshore Installation Manager. The disposal of NORM contaminated waste will be carried out by a duly licensed waste contractor. This license must be issued by the National Agency of Atomic Energy (ANEA).

Staff to perform monitoring program for operation phase will be competent and trained.

Table 9.29 lists the control and mitigation measures to be implemented in the operation phase, to minimise impacts on the environmental and worker health.

Table 9.29: Control and mitigation actions, description, and implementation schedule – NORM Management Plan

Control and mitigation actions	Description	Implementation schedule	Responsibility for implementation	Supervision
Radiometric analysis for baseline data establishment	- Conduct external and surface contamination in identified areas as per NORM Management Plan;	Once (at start of operations)	FLNG Operator	OCAC

Control and mitigation actions	Description	Implementation schedule	Responsibility for implementation	Supervision
	<ul style="list-style-type: none"> - Collect samples for produced water and sandbags for radiometric analysis. 			
Routine radiation safety assessment and decontamination	<ul style="list-style-type: none"> - Collect samples for produced water and sandbags for radiometric analysis. This activity is important to have on record to present to authorities when inspected. 	Every 3 years	FLNG Operator / Contractor	OCAC / ECO
Training and awareness	<ul style="list-style-type: none"> - Conduct training for relevant parties. 	Throughout Project life cycle	FLNG Operator	OCAC
Environmental exposure reduction	<ul style="list-style-type: none"> - Place sufficient ground to cover below the item or work area to limit the amount of NORM material that can potentially reach the surface; - Post signs and internal radiation protection. 	During operations	FLNG Operator	OCAC
Maintenance and inspections	<ul style="list-style-type: none"> - Affix rules at the accesses to the area; - Carry out operations to minimize the risk of dispersion of materials contaminated or particulate matter in the area (wet cuts, wet dust deposits, contaminated sand, etc.); - Protect the floor of the work area with sheets of HDPE or at least polyethylene as well as a layer of non-woven fabric will have been placed to preserve the polyethylene from accidental cuts or breakages; - Before starting an operation where the risk of internal contamination is expected, identify suitable area where operators at the end of the activity, can remove their disposable protective clothing and place in a special container; - Store contaminated equipment and PPE and send to onshore for correct cleaning and decontamination by a third-party contractor; - Do not leave contaminated material unattended; - Remove contaminated devices in a safe condition to avoid dispersion accidental contamination in the environment and will be placed in a special storage area temporary reported; - Decontaminate equipment that is in good condition and can be reused in the process cycle, by qualified companies. Otherwise, send the material to approved companies for disposal as is or for decontamination and subsequent disposal of removed residues; - Place contaminated residues removed from production components (e.g., separators, sludge catcher, reservoir storage, etc.) in drums that shall be labelled with signs stating "NORM" and store temporarily in a designated area marked. 	During operations	FLNG Operator	OCAC
Human exposure	<ul style="list-style-type: none"> - Do not eat, drink, smoke, or chew gum or tobacco in the area where work is being performed on NORM contaminated materials or where NORM contaminated waste is being handled; 	During operations	FLNG Operator	OCAC

Control and mitigation actions	Description	Implementation schedule	Responsibility for implementation	Supervision
	<ul style="list-style-type: none"> - Avoid direct skin contact with NORM contaminated scale, solids, and liquids; - Allow only essential personnel in the work areas where NORM is potentially present; - Train personnel required to work with NORM in the associated hazards and local procedures; - Use of adequate PPE. 			
NORM storage	<ul style="list-style-type: none"> - Mark contaminated equipment by TENORM and then store in a suitable area signalled and with limited access only to personnel in charge and adequately informed; - Waterproof the storage area; - Carry out a specific radiological risk assessment of the area by the RPO subject to regular inspections; - Segregate the material and seal, with a periodic check on the possible dispersion of contaminated material; - Package the sludge in special containers, with the liquid in special drums / tanks; - The storage of waste is a temporary measure while awaiting further processing or disposal in accordance with the WMP. 	During operations	Contractor / MRV / FLNG Operator	OCAC / ECO
NORM transportation	<ul style="list-style-type: none"> - Wrap and/or bag norm contaminated equipment/items ; - Label NORM contaminated waste to meet specifications for Category III in line with IAEA Regulations for the Safe transport of Radioactive Material and will be adequately package/container, 	During off-site transportation	Contractor / MRV	OCAC / ECO
NORM Disposal	<ul style="list-style-type: none"> - Disposal shall comply with IAEA Management of NORM Residues Tec doc no. 1712-2013. 	Post off-site transportation	Contractor	ECO

In the unlikely event that the Project generates waste contaminated with NORM, the waste management contractor will notify the relevant regulators (ANEA, AQUA) and seek guidance and permission before making any decisions regarding NORM waste management. This is to ensure that procedures for transportation, treatment, and temporary storage are agreed, well understood, and meet safety expectations. In such a scenario, the Project will ensure the availability of a NORM waste storage facility.

Following the monitoring program outlined in the next section, MRV will evaluate the need for establishing the NORM waste storage facility.

9.3.4.2 Monitoring Program

Table 9.30 lists the monitoring program to be implemented in the operation phase, depending upon the NORM concentration levels. The monitoring program will be adjusted according to the results against both reference and exemption levels and as viewed necessary by the RPO.

Table 9.30: Monitoring program for operation phase – NORM Management

Aspect	Monitoring Location	Parameters	Reference standards	Measurement methodology / equipment	Frequency	Responsibility	Supervision
Produced water	FLNG	- U-238 - Ra-226 - Pb-210 - Th-232 - Ra-228 - Th-28	OGP Report 412-2016: U-238: 0.0003/0.1 Ra-226: 0.002 / 1,200 Pb-210: 0.05 / 190 Th-232: 0.0003 / 0.001 Ra-228: 0.3 / 180 Th-28: 0.5/40	Alpha, beta and gamma spectrometry	Every 3 years	FLNG Operator	OCAC
Liquid & solid waste	FLNG	- U-238 - Ra-226 - Pb-210 - Th-232 - Ra-228 - Th-228	UNI standards 10802 2013, UNI / TR 11682: 2017 and UNI EN 15002: 2015.	Gamma spectrometry	Every 3 years	FLNG Operator	OCAC
Routine monitoring	FLNG	External exposure measurements and surface contamination measurements	ISO 17025 IEC 60532:2010	Gamma or beta-gamma radiation dose rate Alpha, beta, and gamma surface contamination meter	Every 12 months	FLNG Operator	OCAC

9.3.5 Biodiversity Management Plan

9.3.5.1 Justification and Objectives

The FLNG operations may result in impacts on biodiversity, which will require coordinated and effective implementation of mitigation measures to reduce them to acceptable levels. This Biodiversity Management Plan (BMP) is aimed at managing project activities during the FLNG operations.

9.3.5.2 Proposed Actions and Implementation Schedule

The table below outlines the main management actions for Coral North Project. Several proposed biodiversity mitigation actions have been excluded from the BMP given that they are most adequately placed in other management plans such as the WMP, Emergency Response Plan (ERP), Oil Spill Contingency Plan (OSCP), EMDMP, and the Marine Navigation Management Plan.

Table 9.31: Environmental control actions, description, and implementation schedule – BMP

Control and mitigation actions	Description	Implementation schedule	Responsibility for implementation	Supervision
Minimize impacts on benthic habitats from scouring by flowlines	<ul style="list-style-type: none"> - Place subsea infrastructure in areas of low biodiversity and sensitivity areas; - Use ROV to monitor laying the flowline laying along the target route. If sensitive hard bottom areas are identified, carry out micro routing to avoid the habitat. 	During construction of the SPS	MRV / Contractor	OCAC / ECO
Minimize effects of noise on marine fauna	<ul style="list-style-type: none"> - As per standard operational practice, engage FLNG thrusters only when necessary, at the minimum power required and for the shortest duration required, according to operational needs; - Simultaneous operation of the Coral North and Coral South FLNG's thrusters will be minimised to the extent possible, subject to production capacity, operational safety, scheduling of LNG carriers and metocean conditions; - Adequately maintain all FLNG equipment and thrusters throughout the operational phase; - Implement a Marine Mammal Observation (MMO) protocol during berthing and unberthing operations. This protocol requires the monitoring of noise effects on marine mammals in an exclusion zone of 500m during the use of thrusters at berthing and unberthing of LNGCs and condensate tankers. This task must be conducted by a nominated observer to carry out a 'pre-activity' visual search of 30 minutes to determine the presence of any whale within a 500-meter exclusion zone. Upon sighting, the MMO must notify the relevant parties and the FLNG thrusters will not be initiated or temporarily ceased, taking into account safe operation considerations; - Avoidance of sensitive marine areas and receptors during transit (e.g. maintain 300 m exclusion zone from any marine mammals encountered during transit). 	Throughout operational phase	FLNG Operator / Contractor	ECO / OCAC
Minimize impacts related to artificial lighting from FLNG on avifauna	<ul style="list-style-type: none"> - Implement seabird strike or stranding monitoring plan to identify sensitive species and areas of concern - areas of lighting which result in a disproportionate number of bird strikes; - Evaluation and implementation, if feasible, of adaptive management actions, if areas of concern are identified; - Keep any disoriented or otherwise unharmed seabirds found on the FLNG at night in dark containers and release them during daylight. Any ringed and/or banded birds found on vessels should be reported to the appropriate ringing/banding scheme; - Consider having an on-board bird recovery area and developing response procedures for live and dead stranded birds if injured birds become a common occurrence. 	Throughout operational phase	FLNG Operator / Contractor	ECO / OCAC
Minimization of bird mortality associated with flaring	<ul style="list-style-type: none"> - Install stack flare in compliance with the Design and Construction Regulations/PFEER; 	Throughout operational phase	FLNG Operator	OCAC

Control and mitigation actions	Description	Implementation schedule	Responsibility for implementation	Supervision
	<ul style="list-style-type: none"> - Maintain zero flaring policy subject to operational constraints and without compromising safe plant, operating and worker requirements; - Prepare and implement a monitoring plan for potential bird fatalities. 			

9.3.5.3 Biofouling Management

The FLNG shall have a current anti fouling system certificate.

9.3.5.4 Monitoring Actions

Monitoring requirements for biodiversity cover the following aspects:

- Improve the understanding of predicted impacts and to monitor the success of proposed mitigation measures; and
- Identify new impacts or deviation from expected impacts (if any) and define new and/or enhanced mitigation measures as part of an adaptive management plan.

The monitoring requirements are summarized in Table 9.32. A detailed biodiversity monitoring program is provided in Appendix I of this EMP.

Table 9.32: Monitoring actions, description, and implementation schedule – BMP

Monitoring action	Description	Frequency	Responsibility	Reporting
- Biannual marine fauna monitoring surveys;	- Carry out biannual dedicated monitoring surveys, using MMOs deployed on project vessels, targeted at marine mammals, turtles, avifauna, and fish.	Throughout operational phase	MRV / Contractors	Biannual report
- Seabirds strike or stranding monitoring.	- Implement seabirds strike or stranding monitoring on the FLNG facility.			
- Risk of entanglement with marine fauna monitoring.	- Periodically check risers to detect potential entanglement with marine fauna, in particular with turtles			

9.3.5.5 Corrective Actions

If non-conformities are recorded through monitoring actions, corrective actions should be implemented as required. The nature of these corrective actions or additional mitigation measures should be defined case by case, depending on the assessment of the specific issues. Examples where corrective actions may be required include the following:

- Regular or repeated incidence of marine fauna collisions or entanglements requiring remedial measures;
- Inadequate implementation of the proposed control and mitigation actions.

After corrective actions have been taken, additional monitoring may be required to verify resolution of the issues. Table 9.33 indicates the main proposed corrective actions.

Table 9.33: Environmental corrective actions, description, and implementation schedule – BMP

Corrective Actions	Description	Implementation schedule	Responsibility for implementation	Supervision
Regular or repeated incidence of marine fauna collisions or entanglements	Corrective action will include increased awareness of control measures and risks of marine fauna collisions or entanglements, institution of additional measures such as acoustic monitoring (if not already in use).	Whenever necessary	ECO	OCAC
Occasional events related to avifauna	If events such as collisions resulting in dead or injured birds are frequent or increase in time within the project facility or related to associated facilities, consider investigating the cause and propose adequate measures to minimize it.	Whenever necessary	ECO	OCAC

9.3.5.6 Adaptive Management

Should monitoring results indicate that seabird strikes, or stranding, are regular, or lights are attracting seabirds and once the areas of concern have been identified, the ECO will ensure that management measures to mitigate the observed impacts are developed, as appropriate. The improvement or development of new measures should prioritize reducing the risk on sensitive species. If impacts on species are detected that may lead to a Critical Habitat reassessment and trigger, an action plan to further ascertain, design, and implement measures will be implemented.

9.3.5.7 Performance and Reporting

Performance Indicators

Table 9.34 lists the performance indicators to be monitored for the BMP.

Table 9.34: Performance indicators for the BMP

Performance objectives	Targets	KPI
Avoid fauna collision	Zero incidents of fauna collision	Number of fauna collision
Marine mammal observations	Zero non-compliance with MMO protocol	Number of non-conformities

Reports

The ECO and/or the OCAC are required to maintain detailed records and compile reports to be circulated in FLNG Operator and MRV. The content of each report will depend on the monitoring that has been undertaken. The table below summarizes the records that should be kept relating to biodiversity issues including non-conformance and monitoring results. Records of relevant events should be made following the occurrence and a biannual Performance Report should be prepared, reporting on the recorded events and performance indicators.

Table 9.35: Documentation for the BMP

Document Title	Document Type	Frequency of Record or Report
Marine fauna collision or entanglement incident reports	Incident Reports	Whenever necessary
Monitoring reports	Report	Biannual
Reporting of non-compliance	Report	Immediately following a non-compliance
Performance Report	Report	Biannual

9.3.6 Industrial Hygiene Monitoring Plan

9.3.6.1 Justification and Objectives

The FLNG Operator is responsible to protect the health of employees and other parties associated to the FLNG activities. The premise of the Industrial Hygiene Monitoring Plan (IHMP) is that all injuries and illnesses are preventable and that everyone is personally responsible for their own and fellow workers health and safety.

The IHMP covers occupational health targets, monitoring priorities based on the company, international and national regulatory compliance and the risk to health as well as monitoring, sampling and analysis requirements within the working place. The IHMP will enable the workforce to anticipate, recognize, evaluate, and control risks arising from chemical, biological, physical, and psychosocial elements within the workplace with the goal of facilitating optimal physical and mental health in the workplace.

The main purpose of IHMP is to promote, where reasonably practicable, the best possible physical, mental and social health of people at the workplace, in compliance with the best industry practice such as the National Institute for Occupational Safety and Health (NIOSH), the Australian Institute of Occupational Hygiene (AIOH), the American Conference of Government al Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs).

The IHMP is also intended to meet the requirements of the ISO 45001:2018 “Occupational Health and Safety Management System” International Standard. These items define the Company’s minimum expectations to ensure that risks to personnel are properly managed and minimized to the greatest extent possible. Compliance with the present IHMP will ensure that all workers achieve a consistent standard of care in accordance with ISO 45001:2018, supporting and reinforcing a positive industrial hygiene or occupational health culture within the Project operations.

9.3.6.2 Proposed Actions and Implementation Schedule

Table 9.36 provides an overview of measures to be applied to reduce potential health risks impact on workers identified in health risks assessment to be carried out throughout the project lifecycle. The FLNG Operator and Contractors onboard the FLNG are responsible for implementation under the supervision of the ECO. The monitoring frequency of each biological hazard is set in the IHMP.

Table 9.36: Industrial hygiene control actions and implementation schedule – IHMP

Control and Mitigation Actions	Description
Minimize noise and vibration effects	<ul style="list-style-type: none"> - Reduce emission at source; - Enclose equipment; - Insulate/ limit access; - Provide absorption of sound by cladding of appropriate surfaces; - Provide noise refuges in designated areas; - Use appropriate PPE; - Reduce exposure time; - Use dampers and reduction engineered tools and vehicles; - Automate processes; - Use electrically powered tools; - Regular medical checks including hand-arm vibration syndrome check list; - Use of appropriate PPE.
Heat stress reduction	<ul style="list-style-type: none"> - Reduce heat strain; - Plan work; - Reduce process heat, improve ventilation, evaporative cooling, shield radiant heat sources; - Monitor heat stress conditions; - Develop work-rest regimes.
Non-ionising and ionising radiation	<ul style="list-style-type: none"> - Control external exposure; - Reduce exposure time to a minimum; - Establish safe work distance as much as possible; - Shield the worker from radiation; - Use restricted areas; - Use appropriate PPE
Lighting	<ul style="list-style-type: none"> - Comply with IEC 61892-1 for workplace illumination.
Air quality	<ul style="list-style-type: none"> - Provide good ventilation; - Monitor exposure; - Use of appropriate PPE.
Ergonomic	<ul style="list-style-type: none"> - Introduce device(s) to reduce manual handling; - Provide ergonomic awareness training; - Instil safe and proper practices; - Provide adequate ergonomic equipment.
Chemical and biological hazards	<ul style="list-style-type: none"> - Provide adequate water treatment system; - Control water-based cooling system; - Carry out medical surveillance; - Reduce exposure time; - Adequate store hazardous substances; - Use less toxic materials; - Have avail MSDS and display prominently; - Use appropriate PPE.

9.3.7 Chemicals Management Program

The chemicals management program consists of identifying banned chemicals, process of chemical selection, storage and handling of chemicals and documentation, and hydrotest chemicals.

9.3.7.1 Prohibited Substances

Prohibited substances include the following:

- Ozone Depleting Substances according to Montreal Protocol on Substances listed in Attachment III;
- Asbestos;
- Persistent Organic Pollutants (POPs) are restricted following the Stockholm Convention (such as Polychlorinated Biphenyls (PCB));
- Organotin compound tributyltin (TBT).

9.3.7.2 Chemicals Selection, Storage and Handling

Chemicals and respective dosage levels will be selected to minimise environmental impacts in accordance with the following:

- Avoid chemicals known to contain heavy metals, other than in trace quantities;
- Avoid use of chemicals suspected to cause taint or known endocrine disruptors;
- Categorize and select chemicals according to MARPOL category X, Y, Z and OS and chemicals categorized as X and Y should be substituted into Z or OS whenever possible.
- Letter X, Y, Z, OS means the pollution category assigned to each product under MARPOL Annex II as summed in Table 9.37 below.

Table 9.37: Pollution category system for chemicals

Pollution Categorization System	Hazard to aquatic life	Discharge criterion
Category X	Major Hazard	Prohibition to discharge into the environment
Category Y	Hazard	Limitation on quality and quantity of discharge into environment
Category Z	Minor Hazard	Less stringent restriction on quality and quantity of discharge

When possible, less hazardous alternative products will be substituted for those containing hazardous substances. Control measures to reduce or restrict exposure will be developed and implemented at the work location. Appropriate PPE will be worn as determined by the hazard analysis with emergency showers provided in all locations where acids or corrosive liquids are used or handled.

Chemicals will be stored and handled in accordance with MRV standards covering identification, labelling hazardous materials, transportation, maximum container sizes, safety equipment, general storage and specific storage requirements for flammable and combustible liquids, reactive chemicals, toxic, fuel tanks, chemical tanks, as well as inspection and improvement, health surveillance, exposure and workplace monitoring and worker training.

A Material Safety Data Sheet (MSDS) shall accompany each hazardous material, will be prominently displayed and each employee working in the respective area informed of the potential hazard. Written procedures for the use, storage and disposal are required for those identified as high priority hazardous substances.

Spill prevention and control measures specific to the FLNG shall be implemented through the design of process, utility, and drilling systems to reduce the risk of major uncontained spills with any areas containing hazardous liquids or liquid harmful to aquatic life connected to the closed drain system. Spill kits will be readily available in areas where chemicals are used and/or stored.

9.3.7.3 Hydrotest Chemicals

To ensure that the subsea system, flexible flowlines, and risers are robust as well as to preserve the equipment prior to the later introduction of gas, a leak test is performed using filtered and treated seawater. Mozambican regulations do not provide guidelines on the discharge of the dewatering effluent. The marine pollution prevention regulation (Decree 45/2006) states that offshore discharges must follow international standards. According to IFC EHS guidelines for offshore oil and gas developments, hydrotest waters if discharged offshore shall follow environmental risk analysis, careful selection and reduce use of chemicals.

Accordingly, the Coral North Project has set the following objectives for the environmental management and monitoring measures associated with hydrotest water discharges:

- Minimise the volume of hydrotest water discharged;
- Minimise the quantity of chemical additives;
- Ensure that the additives concentration, toxicity, biodegradability, bioavailability and potential for bioaccumulation are the main factors considered for their selection;
- Avoid the use of chemicals and hazardous materials subject to international prohibitions or phase-outs;
- Ensure that the discharged hydrotest water remains below harmful levels;
- Avoid disposal of hydrotest water into shallow coastal waters or other sensitive areas.

The management and treatment process of the hydrotest water is detailed below and will follow the same process and chemical additives used for the Coral South FLNG project:

In general, seawater is filtered to a minimum quality with suspended particles no larger than 50µm, and treated with a typical chemical cocktail made oxygen scavenger, biocide, corrosion inhibitor and dye.

- For filtered chemically treated seawater discharges to sea, the toxicity (acute and chronic) of the potential additives was carefully studied based on the EU CLP Regulation (Regulation on the Classification, Labelling and Packaging of Substances and Mixtures) and calculation rules applied with the following hierarchy:
 - Selection of chemicals confirmed as to Pose Little or No Risk (PLONOR) to the environment (Convention for the Protection of the Marine Environment of the North-East Atlantic [the OSPAR Convention]);

- Selection of Gold registered products based on their hazard quotient (HQ) according to the Chemical Hazard and Risk Management (CHARM) methodology according to the Offshore Chemical Notification Scheme (OCNS) System;
- Selection of group D or E products for non-CHARMable products according to the OCNS System;
- Select products using an environmental risk assessment to determine acceptability of based on the predicted environmental concentration with the predicted no effect concentration (PEC/PNEC) ratio at the time of discharge to the sea.
- A toxicological risk assessment review was undertaken taking into account dosage rate, toxicity, biodegradability, bioavailability and potential for bioaccumulation to ensure the minimum adverse effects on the ecosystem.

Consequently, a chemical mixture composed of 450 ppm Roemex, RX-5254 (a blend of corrosion inhibitor, biocide and oxygen scavenger) and 100 ppm Roemex, RX-9022 (a dye to assist in leak detection) will be used for hydrotesting the Coral North Project subsea and associated infrastructure. These chemicals are gold rated and categorized as non-hazardous for aquatic life. Should these chemicals no longer be available at the time of hydrotesting the Coral North Project, equivalent gold rated chemicals will be substituted.

After the test has been completed, the hydrotest water will be released at water depths below the photic zone, 200 m to above the seabed taking advantage of the oceanic dispersion of the hydrotest water containing non-hazardous constituents.

9.4 Onshore Logistics Support

This section of the EMP details environmental and social management requirements to be implemented for the onshore logistic support activities, as defined in the EIS, including:

- Noise management;
- Land Transportation Procedure.

9.4.1 Noise Management

The following requirements aim to ensure the management and control of activities that may generate noise emissions from the onshore logistic support operations, as outlined in Table 9.38.

Table 9.38: Environmental control and mitigation actions, description, and implementation schedule – noise management for onshore activities

Control and Mitigation Actions	Description	Implementation Schedule	Responsibility for Implementation	Supervision
Terrestrial noise	- Operate earth moving equipment within specification and capacity (e.g., ensure machines are not overloaded). Use noise abatement accessories	During land-based construction activities	Contractor	ECO

Control and Mitigation Actions	Description	Implementation Schedule	Responsibility for Implementation	Supervision
	<p>such as sound hood and mufflers where feasible;</p> <ul style="list-style-type: none"> - Use intake and exhaust silencers in all internal combustion powered equipment, ensuring that equipment have good quality mufflers installed; - Choose specific access routes for the transport of materials and equipment to avoid passing through inhabited areas, as much as feasibly possible; - Perform the noisiest construction operations (including earthworks and the transport of materials), on working days, during daytime hours; - Maintain all mechanical equipment on a regular basis, replace worn parts and lubricate as required; - Regularly inspect all equipment fitted with combustion engines to check their operating conditions (periodic maintenance), to minimize increased noise emissions resulting from poor operating conditions; - Inform residents living near the area where the construction work is being carried out of the occurrence of construction activities by the Contractor and site supervisors. 			
Terrestrial noise	<ul style="list-style-type: none"> - Ensure that predictive and regular maintenance is carried out on all noise emitting equipment operating in the warehouse; - Provide ear plugs to workers if near high noise generating equipment; - Maintain a complaint register and proceed with a follow up to the noise events. 	Throughout the operation of the onshore logistics base	MRV	OCAC

9.4.2 Land Transportation Procedure

The purpose of Land Transportation Procedure is to ensure that the Company land transportation activities are planned, organized, directed, and controlled in order that risks to employees, community and vehicles are minimized, and transportation is conducted in compliance with Company rules and international/national laws and regulations, and applies to the following:

- Company and contractor’s vehicles and drivers operating on company roads, premises and on public roads, areas on company business;
- Transport activities including personnel and freight movements, and mobile plant activities.

9.4.2.1 Proposed Actions and Implementation Schedule

Table 9.39 lists the control and mitigation measures to be applied, to minimize impacts.

Table 9.39: Land transportation control actions and Implementation schedule – Land Transportation Procedure

Control and Mitigation Actions	Description	Implementation schedule	Responsibility for implementation	Supervision
Ensure safe transportation and driving practices	<ul style="list-style-type: none"> - Use main roads with more traffic lanes and higher traffic capacity; - Use roads with streetlights, particularly for night-time driving; - Avoid residential areas, and minor or dirt roads; - Use shortest routes destination and project pre-established routes; - Plan for carpooling and shared bus transfer for onshore personnel; - Ensure awareness of truck, bus, and car drivers of alternative routes to avoid traffic when passing through a town; - Avoid peak traffic hours during the middle of the day and afternoon; - Avoid night-time driving - Obey speed limits, use of headlights and seatbelts at all times. - Carry out driver training, including how to deal with accident and emergencies. - Use Journey Management Plans. - Reverse parking. - Use IVMS 	Throughout Project life cycle	Contractor / MRV	ECO / OCAC / SCCO

9.4.2.2 Monitoring Actions

Table 9.40 summarizes the or monitoring actions for the Land Transportation Procedure.

Table 9.40: Monitoring actions and implementation schedule - Land Transportation Procedure

Monitoring action	Description	Implementation schedule	Responsibility for implementation	Supervision
Periodic reviews	<ul style="list-style-type: none"> - To ensure that risk exposure is not escalating and that demands for logistics are still subject to justification; - To examine the significant proportion of uncontrollable factors in logistics and the need to counteract these additional risk reduction measures. 	Throughout Project life cycle	Contractor / MRV	ECO / OCAC / SCCO

9.4.2.3 Performance and Reporting

Performance Indicators

The following performance indicators will be monitored:

- Number and type of vehicles;

- Driven kilometres;
- Number of carried passengers and tons of goods;
- Company and Contractor’s vehicle incidents as well as near-miss;
- Motor vehicle crashes and minor related occurrences.

The performance indicators results will be reviewed monthly and reported in the biannual E&S performance reports, as indicated in the following section.

Reports

The following table summarizes the documents that will be maintained for the Land Transportation Procedure. These documents will be prepared, archived, and maintained to document the results of the program implementation. Records of relevant events should be completed following the occurrence and reported on the biannual E&S performance report.

Table 9.41: Documentation under the Land Transportation Procedure

Document title	Type of document	Frequency of record or report
Land Monthly Report	Safety data relevant to land transport operations	Monthly
HSE Risk Management and Risk Reporting	Active and Reactive Monitoring	Continuously

9.5 Management Plans Applicable to All Project Activities

This section of the EMP details environmental and social management that are applicable to all Project components (i.e., that are equally applicable to the FLNG operation, marine vessels, and onshore activities). These include the following:

- Waste Management Plan;
- Stakeholder Engagement and Communication Plan;
- Grievance Mechanism;
- Local Content Plan;
- Work Force Plan;
- Environmental and Social Training Program;
- Emergency Response Plan;
- Cyclone Response Plan;
- Cumulative Impacts Management Framework;
- Occupational Health and Safety;
- Security Master Plan.

9.5.1 Waste Management Plan

9.5.1.1 Justification and Objectives

The objective of the Waste Management Plan (WMP) is to define the specific waste management process for the Coral North Project to ensure that waste material (including hazardous and biomedical) from the project's activities is controlled, handled, and disposed in an environmentally acceptable manner.

The WMP aims to define the waste management process for the project to ensure that the waste material generated during project implementation and operation is controlled, handled, stored, treated, and disposed in an environmentally safe and acceptable manner.

This plan defines roles and responsibilities for waste handling, classifies the different types of waste produced by project activities, defines waste segregation methods, identifies a suitable and safe waste disposal process, and defines the procedures for recording, monitoring, and tracking of waste.

Based on the waste management process defined in this plan, Project phase specific and detailed WMPs will be compiled by the Proponent and submitted for the approval of the competent authorities, prior to the start of each project phase.

9.5.1.2 Legislation and Regulations

The WMP was developed in alignment with the following standards:

- Mozambican laws and regulations particularly Decree 94/2014 “Regulation on Solid Urban Waste Management”, Decree 83/2014 “Regulation on Hazardous Waste Management”, and Decree 8/2003 “Regulation on Biomedical Waste Management”;
- International guidelines and conventions; and
- MRV waste management standards.

9.5.1.3 Waste Management Principles

The Project follows the waste hierarchy below, and illustrated in Figure 9.1, where the first goal is to prevent or reduce waste and, if waste cannot be prevented or reduced, the other steps of the hierarchy will be followed in order to minimize its impact on the environment:

1. Prevention and/ or reduction of the amount of waste generated: achieved through optimizing production processes (e.g., waste heat recovery unit), reducing the use of raw materials (e.g., freshwater), and implementing waste reduction programs (e.g. awareness campaigns);
2. Reuse materials or equipment: involves reusing materials within the project or exploring ways to repurpose them outside the project;
3. Recycling: if materials cannot be reused, recycling opportunities for Project waste will be investigated and implemented, if feasible and / or available;
4. Recovery: if materials cannot be recycled, recovery opportunities for Project waste, such as using composting to turn organic waste into soil amendment, will be investigated and implemented, if feasible and / or available;

5. Treatment: both solid and liquid waste go into treatment plants prior to being disposed in the environment;
6. Disposal: Project waste that will end up in a landfill as a last resort for waste that cannot be treated, recovered, or recycled, in compliance with the local regulations and guidelines for safe disposal of waste.

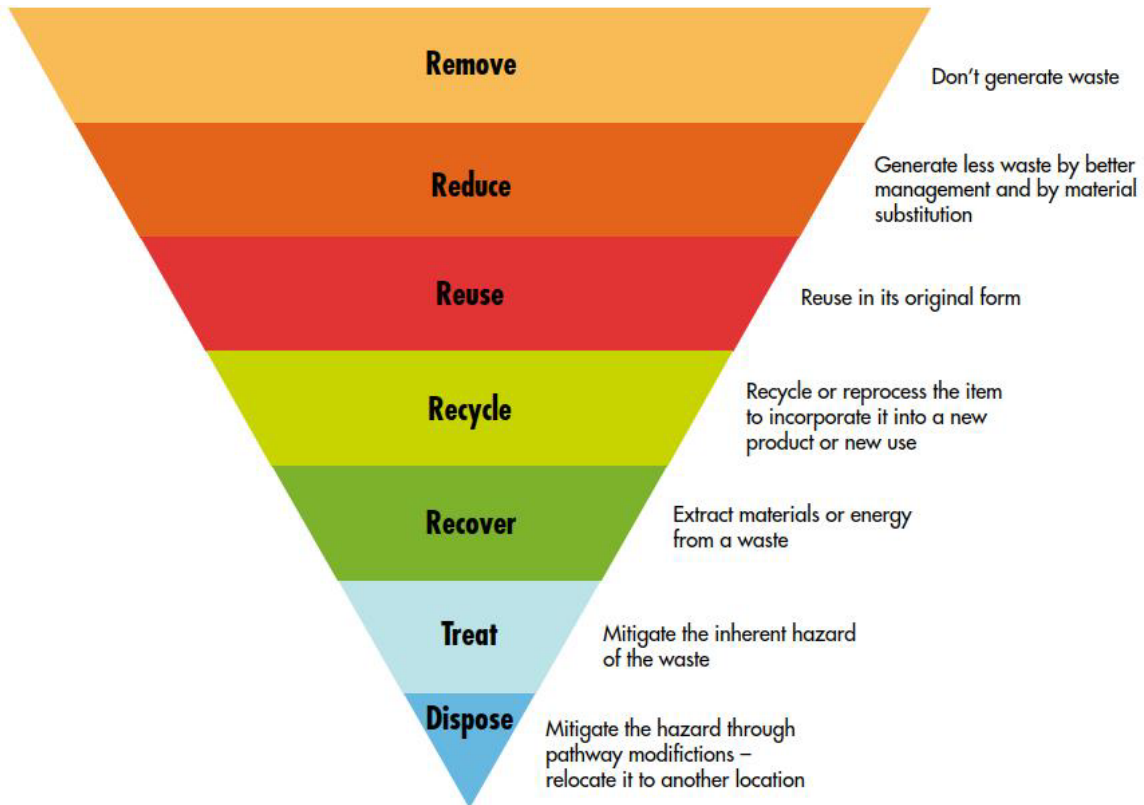


Figure 9.1: Waste management hierarchy

9.5.1.4 Waste Monitoring, Recording, and Reporting

The objectives of the waste monitoring program include the following elements:

- Waste is properly categorized;
- Waste is properly segregated;
- Waste is either adequately recycled, reused, or appropriately stored;
- Hazardous waste is adequately disposed of at an appropriate hazardous waste disposal facility.

All waste producers (the Company, contractors, and sub-contractors) are required to keep a waste transfer register, a waste census, copies of all consignment's manifests, and inspections and reporting records.

9.5.1.5 Waste Performance Goals and Targets

Table 9.42 identifies and describes Performance objectives, targets and KPIs related to the WMP. Waste performance is reported to the relevant authorities and other involved parties, as appropriate, as part of the biannual E&S performance report.

Table 9.42: Waste management objectives, targets and KPIs

Performance Objectives	Target	KPI
Onshore waste management		
Ensure waste requiring disposal is consigned to appropriate disposal facilities.	- Zero occurrences of inappropriate waste disposal reported by waste contractor or authorities.	- Number of non-conformance/ Incidents.
Offshore solid and hazardous waste management		
Compliance with MARPOL and the Company waste management requirements to ensure no accidental discharge of solid or hazardous waste overboard and controlled discharge of certain waste streams	<ul style="list-style-type: none"> - All Contractors, depending on scope relevance, are required to have a WMP or procedures approved by Company; - Wastes designated as hazardous or dangerous goods are identified, packaged, segregated, handled, stored, transported, and tracked in accordance with MARPOL 73/78 and applicable International Maritime Dangerous Goods requirements; - Solid wastes generated offshore are handed over to a licensed waste management contractor for final disposal/elimination ashore; - MSDSs are available for hazardous wastes; - Zero incidents of solid (other than food waste) or hazardous waste released to sea. 	<ul style="list-style-type: none"> - Number of incidents records of waste transfer notes; - Number of non-conformities; - Number of incidents; - Number of complaints reports; - Number of incidents records of disposal of solid waste to sea.
Waste minimization		
Application of the waste hierarchy	<ul style="list-style-type: none"> - Project's waste generation baseline to be set based on the first year of the operation phase; - Reduction of the waste generated and disposed by: <ul style="list-style-type: none"> o Operation of waste minimization equipment on all project vessels, including the FLNG; o Effective segregation and disposal methods for different types of waste; o Strong culture of waste reduction in the Company and Contractors; o Waste tracking and reporting system from generation until disposal; o Waste contractor committed to reduce waste. - Establish quantitative waste reduction targets following establishment of the baseline after first year of operations. 	<ul style="list-style-type: none"> - Amount of waste generated per vessel and / or facility; - Amount of waste that is recycled; - Number of waste-related incidents.

9.5.2 Stakeholder Engagement and Communication Plan

9.5.2.1 Justification and Objectives

The Coral North Project may induce socioeconomic impacts due to the reduction and restriction of certain areas for commercial and industrial fishing fleets and sports fishing and increased maritime traffic. Additionally, the presence of the Coral North FLNG project creates expectations in the community regarding employment opportunities and potential benefits in the project community. Mismanagement of high community expectations may have a negative impact on project activities and the company's reputation.

These risks can be effectively controlled through the establishment of effective communication channels between the Contractor / Proponent and the relevant Interested and Affected Parties (I&APs)⁶, to ensure awareness of proposed work and to timely flag and address any source of discontent.

The aim of the Stakeholder Engagement and Communication Plan (SECP) is to ensure that I&APs are well informed of planned and ongoing activities, and to prevent any social conflicts that may hinder or prevent the execution of the planned work. This SECP provides a framework on how to identify and engage with I&APs. Based on this framework, the Proponent will develop and implement detailed Operative Stakeholder Engagement and Communication Plans (OSECP) for the drilling and completion, installation, commissioning, and operational phases of the Project.

9.5.2.2 Key Principles

This section outlines the key principles applicable to the SECP, which conform to IFC policies and guidelines. The principles are:

- All relevant stakeholders must be consulted and be involved in a two-way communication;
- All relevant, available, and accurate information must be provided in a form that is easily understood by the relevant stakeholders;
- Consultations must be a regular and on-going process to allow stakeholders to know whether and how their concerns are being addressed;
- Supply of information and consultation with different stakeholders will be through a language and medium that stakeholders are comfortable with;
- Specific and transparent mechanism for recording of grievances and a feedback mechanism to inform the action taken;
- Clear enunciation of responsibility and accountability procedures, personnel, and resource availability for effective implementation of the SECP.

9.5.2.3 List of I&APs

I&APs are people and/or organizations which may be affected by project related decisions or activities, or that have a specific interest in the project or project's area of influence.

⁶ For communication with mariners, please refer to the Marine Navigation Management Plan.

The proposed Coral North Project will be implemented more than 50 km offshore of Cabo Delgado, therefore involving different stakeholders at different levels. Relevant I&APs include the following:

- Regulatory agencies (ADNAP, Provincial Directorate of Agriculture and Fisheries of Cabo Delgado (DPAPCD), IDEPA, etc.);
- QNP Administration and ANAC;
- Administrative and local authorities;
- Non-governmental Organizations (NGOs) and Civil Society Organisations (CSO);
- Industrial and semi-industrial fisherman associations; and
- Tourism operators.

9.5.2.4 Proposed Actions and Implementation Schedule

Table 9.43 indicates the main proposed actions for the implementation of the SECP. For all engagement meetings, minutes will be produced and kept on file with related attendance lists

Table 9.43: Actions and implementation schedule - SECP

Control and mitigation actions	Description	Implementation schedule	Responsibility for implementation	Supervision
Communication with commercial fishing operators	<ul style="list-style-type: none"> - In coordination with ADNAP and DPAPCD, establish appropriate communication channels with relevant commercial fishing operators, providing information: <ul style="list-style-type: none"> o Project update and description of the planned activities for the drilling and completion, installation, commissioning, and operation phases; o Risks and mitigation measures associated with above activities; o GM process. 	<ul style="list-style-type: none"> - All project phases; - In the event of any activity change. 	MRV / Contractor	SCCO
Communication with tourism operators	<ul style="list-style-type: none"> - Liaise through the Provincial Directorate of Tourism (DPT) of Cabo Delgado, providing information on: <ul style="list-style-type: none"> - Project update and description of the planned activities for the drilling and completion, installation, commissioning, and operation phases; - Risks and mitigation measures associated with above activities - GM Process 	<ul style="list-style-type: none"> - All project phases; - In the event of any activity change. 	MRV / Contractor	SCCO
Engagement with provincial authorities	<ul style="list-style-type: none"> - Inform the Cabo Delgado Provincial Government about the planned activities prior to starting the work 	<ul style="list-style-type: none"> - All project phases; - In the event of any activity change. 	MRV	SCCO
Public consultation	<ul style="list-style-type: none"> - Inform on the project upcoming activities and expected impacts. 	Throughout the project lifecycle	MRV / Contractor	SCCO
Grievance Register	<ul style="list-style-type: none"> - Prepare and disclose a GM, so that I&APs are aware they can submit complaints or concerns regarding the project 	Throughout the project lifecycle	MRV / Contractor	SCCO

9.5.3 Grievance Mechanism

9.5.3.1 Background

Given that the project may result in interactions (both real and perceived) with various stakeholders as well as create community expectations throughout the life of the project, a Grievance Mechanism (GM) has been prepared for the Coral North Project.

Understanding and managing community and stakeholder issues and concerns is vital to the long-term successful relationship between the company and local stakeholders. Because unresolved issues can adversely affect the project, it is important that a simple and effective grievance process is established and implemented.

9.5.3.2 Purpose and Objectives

This GM is the set of activities to be carried out when MRV receives, in writing or verbally, concerns or grievances in relation to Coral North Project activities. The mechanism guarantees a proactive and structured approach enabling the company to receive, recognize, investigate, respond, and resolve complaints and grievances from individuals and/or groups of individuals and organizations in a timely manner. The GM has been developed to comply with the IFC's PS 1: Assessment and Management of Environmental and Social Risks.

Lodged complaints include both grievances and concerns. A grievance is a complaint raised by an individual or group of individuals and organizations, related to a specific impact or incident, and which needs to be formally registered and addressed through the GM. Grievances can result from either real or perceived impacts of MRV's operations. On the other hand, a concern is a question, request for information, or general perception brought to the attention of MRV, although which is unrelated to a specific impact or incident.

The GM establishes a system to manage and track community issues to assist the company understand stakeholder perceptions of project risks and impacts so as to adjust its measures and actions to address community concerns. The GM also seeks to acknowledge and map community suggestions in order to better understand community perceptions about the project and use them as an opportunity for continuous improvement, creating or changing an existing system and learning process.

The GM specific objectives are:

- Establish a process for responding to grievances in an understanding, transparent and culturally appropriate way;
- Develop an accessible, transparent, and efficient channel for people involved in and/or impacted by the Project to voice their grievances and concerns;
- Facilitate effective dialogue and open lines of communication with the public and stakeholders;
- Define an effective stakeholder engagement strategy for remediation of concerns raised or impacts it has caused;
- Establish a system of investigation, response, and prompt grievance resolution;

- Maintain social license to operate demonstrating the company takes community concerns seriously;
- Assist MRV in fulfilling its responsibility to respect human rights;
- Improve the Project social performance.

9.5.3.3 Scope

This mechanism applies to people or groups of people or organizations and/or business that may affect or be affected by MRV's activities, products or services and its performance, on the Area of Influence (direct and indirect) of the Coral North Project.

9.5.3.4 Principles

This mechanism is governed by the following principles:

- **Safety:** any interested or affected community member, group or institution should feel safe and confident to raise a grievance or suggestion without fear of reprisal;
- **Accessibility:** the GM should be readily available and easily accessed by any interested stakeholder, group or institution. MRV will take all practicable steps to remove potential constraints to access such as language, illiteracy, distance, etc.;
- **Timely:** all grievances will be managed in a timely manner to avoid escalation into a dispute and cause major risks to the project;
- **Respect:** the stakeholder grievance resolution process will be in compliance with internationally recognized human rights standards;
- **Transparency:** the stakeholder grievance and suggestion process and outcomes will be sufficiently transparent to meet public interest concerns without compromising the privacy or identity of individuals;
- **Predictability:** the process will be consistently applied with clear timeframes for each stage and provide clarity on the types of process and outcomes that can, and cannot be offered.

9.5.3.5 Type of Complaints and Suggestions

There are three main types of complaints and suggestions, namely:

- **Individual:** refers to a grievance or suggestion raised by an individual;
- **Group:** refers to grievance or suggestion raised by a specific group of people such as artisanal fishing association, tourism group, gender group, disability group, etc.; and
- **Community:** refers to grievance or suggestion involving a whole community. These complaints may be made in a community meeting or by the community leader on behalf of the community outside of a community meeting, and in this case explaining the reason why this is a community complaint.

9.5.3.6 Grievance Mechanism Procedure

General Considerations

The GM assists MRV and those potentially impacted by its operations to resolve issues in a non-judicial manner. However, it does not preclude stakeholders from access to judicial system. All grievances should be documented, and the complainants treated with respect.

MRV will ensure complainants have enough access points available for ease of easy lodging a grievance (easily accessible, in language they understand, accessible to illiterate people). Publicizing the access points is part of the MRV outreach and awareness building. Access points are generally communicated at stakeholders engagement meetings. In addition, GM flyers shall be distributed to the stakeholders in different engagement events.

The GM follows a seven-step mode presented in Figure 9.2.

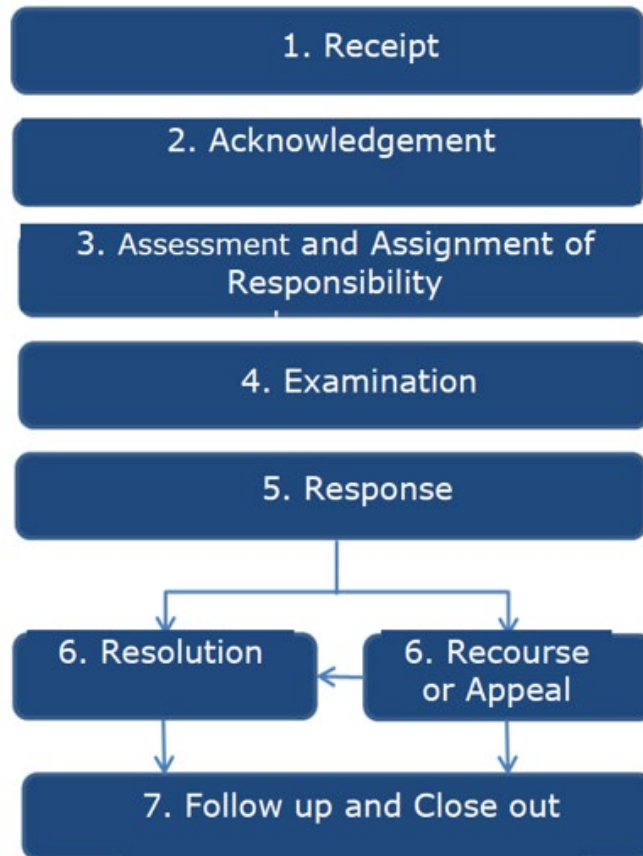


Figure 9.2: Process for grievance management

Grievances will be mapped and monitored in the company Stakeholder Management System (SMS⁷). The recording of the grievances as well as the process of evaluating, managing, and closing them must be carried out by MRV’s Sustainability department (SUST), through the use of the SMS application.

⁷ Eni web-based platform that supports stakeholder management in the territories in which Eni operates.

Written complaints refers to a registration in a complaint book, formal letter, or email correspondence. All written complaints will be channelled to the MRV Grievance Officer (GO) to be processed through the grievance mechanism process. Written complaints can be sent to the following addresses:

- Pemba MRV Offices – Bairro Alto Gingone, EN-106, Renco Building, Pemba;
- Maputo MRV Offices – Rua dos Desportistas, N.º 733918, JAT 6,3V-3 Building, 12º a 4º floor, Maputo
- By email address: erb.comunidade@eni.com;

Written complaints may also be lodged in the Grievance Boxes installed in the following locations:

- MRV offices in Pemba;
- MRV offices in Maputo;
- Pemba Yard;
- Pemba Port;
- Paquitequete Primary School at Kuparata; and
- Paquitequete Neighbourhood Headquarters.

Additionally, complaints can be made verbally, through a green line number (800844840), or on Eni's website: <https://www.eni.com/en-IT/actions/global-activities/mozambique.html>

Acknowledgement and Registration

The MRV GO will acknowledge the receipt of the grievance by completing the dedicated form and attach any supporting documents or information.

To ensure that the complainant knows the grievance is formally accepted, the MRV GO provides the complainant with the details of the grievance (case number, date of formal lodging of the complaint, etc.). In the case of grievance lodged anonymously, the MRV GO shall register the grievance. MRV with the support of the Legal Function shall determine how and whether to undertake an investigation assessment and assignment.

Once the grievance is registered, the MRV GO will inform SUST, who then carries out a rapid response analysis of the concerns and grievances. A rapid assessment, within five (5) business days, by SUST may help to satisfactorily address lodged grievance, in order that they do not escalate. If SUST is not able to provide a rapid response or if investigation of the grievance requires expertise beyond its mandate, SUST will bring the grievance to investigation phase and assign responsibility to a specific MRV department manager for further investigation.

Examination

If the grievance is not closed with the rapid response, the GM will proceed to the examination (investigation) phase.

Examination shall be undertaken to verify the grievance, understand the complainant's perception of the issue and what should be done about it and develop corrective actions to eliminate or minimize recurrence.

SUST carries out an analysis of the concerns and grievances received and, in agreement with the legal function and the MRV Managing Director (MD) will then assess the grievance and classify it in a minor or major grievance.

When involved, the Department Manager or the function responsible for the investigation shall be allowed up to 10 business days (14 calendar days) to complete the investigation. The Department Manager can appoint a person in his team to complete the investigation (the “Investigating Officer”).

Records of all meetings, investigations, and resulting decisions shall be kept and properly stored.

The findings of the investigation must be documented by the Investigating Officer on the dedicated examination and resolution form. The Investigating Officer makes a recommendation for resolution to SUST.

Response

A clear and accurate response to complaints or grievances is important to build trust on MRV.

If the case grievance is not managed through the grievance rapid response, SUST ensures that the sharing and approval of the proposals for resolving the grievance (for example, any actions to be taken, responses to complaints, etc.) are carried out.

Resolution

Once the proposed resolution has been notified to the complainant by the MRV GO, the latter may agree or disagree with the proposal.

If the complainant agrees with the proposed resolution, the MRV GO asks the complainant, to sign the proposed resolution, containing the agreed actions and/or activities to be performed and, where possible, the time for their execution, for his and/or her acceptance.

The MRV GO ensures that all the records, agreements and associated materials are documented and entered in the grievance register in chronological order and categorizes the grievance as “Resolved”.

Recourse or Appeal

If the complainant is not satisfied with the proposed solution, the MRV GO notes the reasons for the disagreement and promptly informs SUST.

Following the examination, SUST together with the function responsible for the investigation, in agreement with the MRV MD, may suggest involving third parties to resolve the grievance and/or concern.

Follow-up and Close Out

SUST ensures that the resolution of the grievances and/or concerns is correctly implemented, in line with what was authorized, and monitors the results.

During the follow-up, SUST promptly identifies cases that deviate from what was authorized and which may require a new authorization.

Lastly, MRV GO categorizes the grievance and/or concern as closed.

9.5.3.7 Involved Parties and Accountabilities

SUST will be the custodian and responsible body at MRV for implementing the GM. The GM will involve the following parties with their accountabilities as follows:

- MRV: MRV will be represented by the Sustainability Manager who has responsibility to manage the protocol (internal and externally) including records, investigation, sign-off and closing. Depending on the matter raised, another Department Manager will be advised and requested to deal with the issue accordingly. The Grievance Response Committee will review the community grievances and suggestions periodically (monthly);
- Complainant: includes individual stakeholders, groups, or communities. The main responsibilities include complaint and suggestions notification;
- Provincial and/or local government: the provincial and/or local government will be represented by relevant parties (i.e., tourism department, fishing department, head of locality, etc.) who will have the primary role of witnessing the process and providing advice when necessary.

GOs should be trained on how to deal with community complaints regarding compliance and other conflicts that may arise during project operations. These officers should act to minimize potential conflicts, whenever possible, and register any eventual incident.

GOs will compile different reports for all incidents and conflicts, which will be submitted to the SCCO / Stakeholder Relations Manager who in turn will be responsible for forwarding the incident reports to the relevant functions.

Monitoring and reviewing the GM is essential to determine if it is functioning as intended. Monitoring should be used to track and reflect on the complaints, the access points, the formats used, the investigation processes, and the responses given. This constitutes a check on how these different aspects of the GM are working, and in particular on whether stakeholders understand their rights, are able to use and understand the system, and may also suggest ways to improve it.

SUST will present the Grievance Performance Report to MRV MD.

The statistics (overall figures, number of cases, specific details, etc.) can be distributed to key external stakeholders, and the distribution frequency will be decided by the MRV MD.

9.5.4 Local Content Plan

9.5.4.1 Justification and Objectives

A Local Content Plan (LCP) will be prepared for the Coral North Project, in compliance with Decree-law n° 2/2014, and submitted to MIREME/INP for approval, following which it will be updated and resubmitted for approval every three (3) years. This section provides guidance for the development of the LCP by MRV.

The aim of the LCP is to set guidelines for the maximization of Local Content, as reflected into the terms and conditions of the approved contracts. These shall be taken as reference and implemented during the project's life cycle.

The LCP aims to foster and promote a sustainable and proactive contribution to the socioeconomic development in the country with the aim to significantly expand the benefits for local people and communities from new O&G opportunities and developments in country. This approach will be provided through the following interventions:

- Needs assessments and skills gap analyses;
- Support in the capacity of existing vocational training centres in the country;
- Support technical professional training, training of trainers, curricula development and accreditation;
- Promote on the job training, apprenticeships, and mentoring programmes for young Mozambicans, with a special focus to women;
- Priority should be given to the local and regional markets whenever possible in the purchase and acquisition of goods and services;
- Promote Mozambican Small Medium Enterprises development.

9.5.4.2 Monitoring and Reporting

A review of local content performance is included in the Project's monthly management reports. The review summarizes local content activities for the review period, assesses performance against specific indicators, and provides an analysis of trends or issues related to local content.

In addition to that, Contractors are required to report quarterly key performance metrics demonstrating its and its subcontractors' efforts in maximizing local hiring, national workforce development, utilization of local suppliers, and national supplier development.

Performance indicators used to monitor the effectiveness of the LCP are generally the following:

- Payments to national personnel planned to be directly engaged by contractor;
- Goods and/or materials of Mozambican origin planned to be purchased for the purpose of contract execution;
- Works and/or services of Mozambican origin scheduled to be purchased for the purpose of contract execution;
- Statutory payments to the republic of Mozambique;
- Training plan of national resources; and
- Recruitment levels of national resources.

9.5.5 Work Force Plan

MRV submits the yearly Work Force Plan, in consultation and articulation with INP, to the National Institute for Vocational Training and Labour Studies (IFPELAC) sixty (60) days before the end of each year, for the following year, in compliance with Decree-law No. 2/2014.

9.5.5.1 Recruitment Program

MRV ensures investment in Mozambican human capital in the long term, through training and development of strong, experienced, skilled, and qualified workforce. MRV will recruit, evaluate, and train Mozambican citizens with potential, for long-term hiring with the aim of reducing the need for expatriates. Recognizing the opportunity for sustainable benefits, the Project is committed to recruiting, developing, and training a pool of Mozambican talents capable of meeting present and future business needs.

The Project, in particular, during the Operations Phase, will prioritize the involvement of Mozambican citizens for activities at all levels of the organization.

The recruitment strategy, as in Coral South Project, is based on the local market in order to attract Mozambicans with the basic necessary skills.

Vacant opportunities in Mozambique will be communicated through newspapers, career fairs. Public announcement of vacancies will be made at least on 2 the Country's major Newspapers.

The plan is to reach a maximum number of around 350 employees in the first period of production phase and then stabilize with around 300 employees. At the same time, local resources that have been trained for Coral South Project will also be involved in Coral North Project for the purpose of assigning them higher positions based on their already existing career development path. In addition, some of them could also have the opportunity of an international assignment (Korea and France) for the construction & installation phase.

Since gender balance is also at the core of MRV's strategy, MRV will ensure that the recruitment process is considerate of gender. MRV's attention to gender starts from the very outset, i.e. from the recruitment activities all the way across the development of the resources including the taking of leadership and critical positions within MRV's structure.

9.5.5.2 Training Program

MRV considers training as a key tool in developing the workforce and, as experienced with the Coral South Project, will continue to promote training paths for national staff in different areas: drilling, production, geosciences, HSE, engineering, and business support functions.

Training will be delivered in Mozambique as well as abroad. It will include a theoretical and hands-on practical component, which will take place at MRV's operational sites.

Based on MRV's operating experience in the region, this is a long-term effort and achieved by applying a robust strategy for on-job training programs, coupled with competency assessment and evaluation programs.

This will be pursued by developing resources for the specific positions and gradually replacing expatriate positions with locals', during the operational phase upon the success of on the job training, competence assessment and evaluation program.

One of the aspects of the training is also guaranteed by the expatriates that join the project, who contribute to the development of local staff, through knowledge sharing and skill development, to guarantee the professional growth of national staff.

9.5.5.3 Nationalization Plan

Based on the above, the preliminary nationalization plan has been designed and is illustrated in the chart below (Figure 9.3). The chart shows the estimated needs of personnel and the relevant nationalization plan. This is based on the promotion of national staff, after having gone through the necessary professional steps and acquiring the required skills.

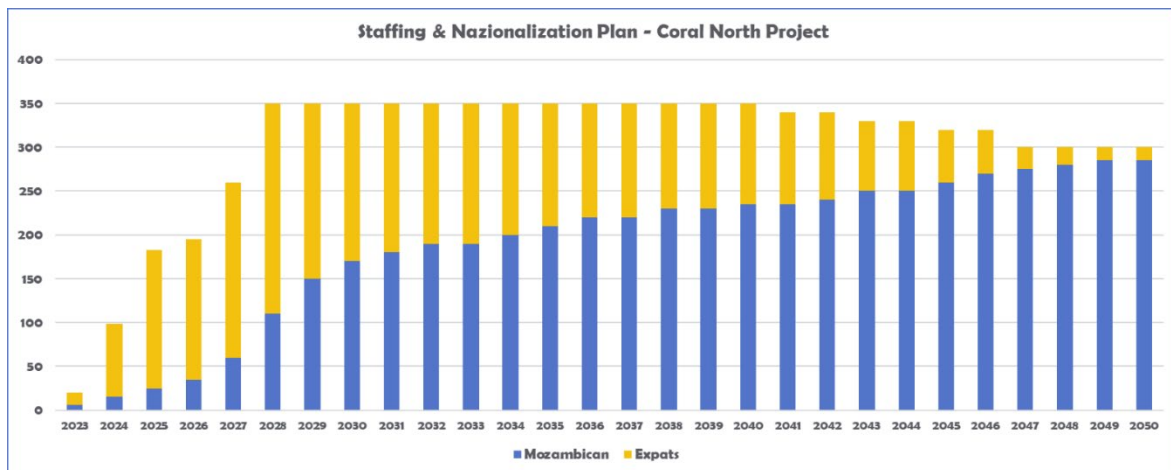


Figure 9.3: Staffing and nationalization plan for Coral North Project

This approach shall remain until the nationals account for about 90% of the entire workforce.

The greatest number of national staff will be assigned into the operations organization, after successfully completing on the job training. In the construction and installation phases, Company will utilize the local resources trained for Coral South Project, in order that they perform more critical positions for the commissioning and construction activities, both in Mozambique and abroad, through international assignments (France and Korea).

Company shall encourage its Contractors to select, hire and train national personnel to maximize the local content.

9.5.6 Environmental and Social Training Program

The Environmental and Social Training Program (ESTP) is as a systematic process whereby workers are instructed to carry out a set of measures established in the EMP. The workers are involved in the Coral North Project daily life, and the implementation of a ESTP is a critical feature for the improvement of the Project E&S performance. The Coral North's ESTP will be developed on a yearly basis and integrated as part of the Company HSE Training Program. Company will task Contractors to develop training programs and will monitor its implementations during execution of activities.

9.5.6.1 Justification and Objectives

All project activities will be conducted to prevent and minimize negative impacts on the natural and social environment. For this, it is necessary to provide all relevant workers with basic understanding about relevant E&S issues as well as to strengthen that knowledge on a periodic basis.

Given that workers may have little or no awareness about environmental or social issues, it is MRV's responsibility, as well as its Contractors and Subcontractors, to improve E&S and natural environment awareness and performance.

Training and awareness will be designed to stimulate awareness, reflections, practices, procedures, and environmentally oriented behaviour.

The ESTP will also include a social impact awareness component to ensure that workers are aware of the social aspects associated to the Coral North Project, such as labour rights, human rights issues, sexual exploitation, abuse, harassment and Gender Based Violence, grievance mechanisms, stakeholder engagement, gender issues, etc.

9.5.6.2 Target Group

The ESTP shall be applied to all relevant employees.

9.5.6.3 Teaching Materials

The teaching materials may include brochures, posters, PowerPoint presentations, and informative videos, among others. Brochures will include content related to the natural and social environment, security procedures and best environmental working practices.

9.5.6.4 Technical Team

All training actions will be conducted by MRV, FLNG Operator and/or Contractor. To implement the ESTP, the Contractor shall appoint an ECO and/or SCO with experience in E&S management, who will be responsible for the coordination and implementation of activities. Alternatively, external training providers may be selected to deliver training.

9.5.6.5 Monitoring and Evaluation

MRV shall monitor effectiveness of training through formal or informal employees engagement about specific E&S topics and analysis of environmental performance reports.

The Project's E&S biannual performance report will include a summary of the training conducted, number of sessions completed, and number of participants for the given period.

9.5.7 Emergency Response Plan

An Emergency Response Plan (ERP) is in place to cover all MRV activities (plans hse 003 MRV) and to describe all stages and phases of the emergency response process, from call out until the emergency is over and the normal operations has commenced. MRV's ERP was submitted to and approved by INP.

It defines the organization structure, the emergency response team composition, links with emergency related documents, roles and responsibilities, personnel responsible for initiating these actions, communication channels, main actions to be taken by the designated personnel, and the resources that should be available in case of an emergency situation. It also provides guidance to line management and contractors about emergency response related processes, organization, roles, and facilities. It also provides specific instruction for securing operations and mustering personnel involved in simultaneous operations in case of emergency.

MRV's Emergency Response Team (ERT) supports the emergency management from onshore in Mozambique and its structure and role are detailed inside MRV's ERP. The point of contact with MRV Company Representative onboard is MRV Production Manager that notifies MRV Emergency Response Coordinator (Technical Director), whom in turn notifies MRV's Emergency Response Manager (General Manager).

FLNG Operator's headquarters (HQ) ERT supports the emergency management from onshore and its structure and roles will be detailed inside the FLNG Operator ERP, to be developed. The team will convene in Maputo Emergency Management Centre (Maputo's Coral Emergency Response Room) and will be connected with the ERT on the FLNG through existing video conference & communication system and can support by different means in Mozambique. The ERT on the FLNG will manage Level I emergencies following the instructions of the Offshore ERP, Emergency Response Action Plan, and the Station Bill.

The main objectives of the ERP are to:

- Minimize, so far as reasonably practicable, the consequences to human life, the environment, MRV asset and business, and reputation in case of an emergency situation, by ensuring an effective and efficient response;
- Ensure the availability of adequate information on the emergency situations through a good communication system;
- Ensure that all personnel are aware of the specifics of simultaneous operations and emergency procedure; and,
- Ensure efficient management of the emergency through all dedicated resources.

To complement the ERP, the following plans, specific to the Coral North Development Project, will be prepared and submitted for approval to the competent authorities:

- Oil Spill Contingency Plan (OSCP);
- Blowout Emergency Response Plan (BOERP);
- Medical Emergency Response Plan (MERP);
- Pandemic Preparedness and Response Plan;
- Cyclone Response Plan.

The ERP shall be revised any time a significant change occurs (e.g., new scenarios, laws, regulations, etc.) or based on lessons learnt from drills or near misses, to ensure a satisfactory level of emergency preparedness.

Emergency response training will be delivered to the relevant workforce according to the yearly HSE training plan.

9.5.7.1 Oil Spill Contingency Plan (OSCP)

The Oil Spill Contingency Plan (OSCP), provides guidance, notification, and communication requirements critical to responding to an oil spill incident during all phases of the Coral North Project. A project specific OSCP for the Coral North Project will be prepared and submitted for regulatory approval. This section provides guidance for the development of the OSCP.

The OSCP follows a tiered preparedness and response structure consistent with the OPRC Convention. It supplies ERTs with the response techniques, main procedures and information required during oil spill response.

The OSCP interfaces with the ERP and other emergency documents enforced by MRV or its Contractors.

This OSCP is composed of three main parts:

- Part I: Action Plan;
- Part II: Preparedness;
- Part III: Oil Spill Scenarios Assessment.

Proposed Actions and Implementation Schedule

Table 9.44 lists the actions required to develop and implement the OSCP.

Table 9.44: Oil spill preparedness and response measures, description, and implementation schedule

Control and mitigation actions	Description	Implementation schedule	Responsibility for implementation	Supervision
Develop OSCP	<ul style="list-style-type: none"> - Develop a project specific OSCP for the Coral North Project, in compliance with national regulations and international best practice; - Submit the Coral North OSCP for approval of INAMAR and other competent regulatory bodies 	Prior to drilling phase	MRV	OCAC
Oil spill control actions	<ul style="list-style-type: none"> - Implement the OSCP, in compliance with applicable regulations; - Set up an Incident Management and Crisis Management Support Team; - Set up an FLNG ERT under the umbrella of MRV ERT; - Ensure training of ERT; - Provide the necessary material resources for emergency response, as defined in the OSCP; - Communicate to competent authorities, as defined in the OSCP; - Abide by strict safety procedures to minimize risks; 	Throughout all project phases	MRV	OCAC

Control and mitigation actions	Description	Implementation schedule	Responsibility for implementation	Supervision
	<ul style="list-style-type: none"> - Enforce all policies and procedures. Tier 1 oil spill response equipment will be staged on support vessels and/or at shore; - Ready response crew and third-party responders when unplanned event occurs. 			

Monitoring Actions

Table 9.45 summarizes monitoring actions for the OSCP and implementation schedule.

Table 9.45: Monitoring actions, description, and implementation schedule - OSCP

Monitoring action	Description	Implementation schedule	Responsibility for implementation	Supervision
Monitor occurrence of spills	<ul style="list-style-type: none"> - Record all accidental spills onto the ocean. Record the date, location, approximate volume of each spill and corrective measures implemented. 	Whenever necessary	Contractor / MRV	ECO / OCAC

Corrective Actions

In case non-conformities are detected through monitoring actions, corrective actions should be implemented, as required. The nature of the corrective actions or additional mitigation measures should be defined case by case, depending on the assessment of the specific issues. Table 9.46 presents the main proposed corrective actions.

Table 9.46: Corrective actions, description, and implementation schedule

Corrective action	Description	Implementation schedule	Responsibility for implementation	Supervision
Act on accidental spills	<ul style="list-style-type: none"> - Act immediately if any accidental spill is detected. Follow procedures described in the OSCP; - Investigate the causes and assess spills, as define in the OSCP, and implement preventive measures to avoid future events. 	Whenever necessary	Contractor / MRV	ECO / OCAC

9.5.7.2 Blowout Emergency Response Plan

The BOERP provides information and procedures for handling emergencies essential to ensure the protection of human life, environment, and the MRV assets. This document describes the approach followed by MRV to correctly manage any well control emergency for the Coral North Project, in compliance with the Eni’s standards, local regulations, and best industry practices.

The objectives of the BOERP include the following:

- Protect personnel at well site preventing further accident during the first stage of the emergency;

- Prevent further environmental and/or facility damage while adequate equipment and personnel for the response are being mobilized;
- Reduce response time for the intervention by positioning the critical equipment for ready access and planning for its mobilization, identifying in advance critical issues and correctly addressing through the Company procedures;
- Reduce the overall event time by determining the proper response structure and prioritizing response activities.

9.5.7.3 Medical Emergency Response Plan

The Medical Emergency Response Plan (MERP) is part of the ERP and presents a further elaboration of the Medical Evacuation procedure.

This plan applies to all MRV and its Contractors' sites and covers all onshore and offshore projects and activities throughout the life cycle of the operation or Project and employees, Contractors, service providers and visitors. The Contractors prepare specific MERP in compliance with MRV standard and verified by MRV Health Function. The Contractors' MERPs are linked and in line with MRV's MERP.

The MERP provides guidance on the action to be taken by medical and non-medical personnel in case of medical emergency with the main objectives including the following:

- Save lives and minimize risks to human health, by means of an effective and efficient intervention;
- Identify and make responsible the different action levels according to the emergency;
- Ensure the availability of adequate standard of medical support and correct information pertaining to medical situations;
- Protect public health;
- Initiate early and efficient response through the utilization of all available resources.

9.5.7.4 Pandemic Preparedness and Response Plan

The Pandemic Preparedness and Response Plan (pro HR/Health 010 ERB) defines individual's responsibilities and actions to provide an organized assistance and response to a pandemic medical emergency related to MRV operation locations.

This plan provides strategic planning for medical response and preparedness for pandemic, to:

- Minimize the health effects of any pandemic disease to the staff and their families;
- Contain the disease by reducing spread within Company facilities;
- Maintain essentials services if containment is not possible.

Table 9.47 lists the control and mitigation measures to be applied, to minimize impacts.

Table 9.47: Pandemic preparedness and response measures, description, and implementation schedule

Control and mitigation actions	Description	Implementation schedule	Responsibility for implementation	Supervision
Pandemic response & vigilance	<ul style="list-style-type: none"> - Monitor staff who are ill or suspected to be ill in the event of a pandemic, including contract staff unexpectedly absent from work; - Quarantine and/or work restrictions and/pr treatment of suspected cases; - Maintain infection control and/or mitigation supplies at workplace. 	Throughout project lifecycle	MRV	OCAC/SCCO
Communication with staff	<ul style="list-style-type: none"> - Communicate the possibility of a pandemic very early to staff including information on the diseases; - Communicate pro-actively to staff, including how the organization is handling the situation; - Discuss with staff possible health and safety issues, potential for stand down, and leave arrangements if they are ill or need to look after any pandemic-stricken person of their family; - Arrange health awareness sessions by an expert on the subject. 	Throughout project lifecycle	MRV	OCAC/SCCO
Business planning for absence	<ul style="list-style-type: none"> - Identify sufficient backups for people and skills if there is a high level of absence; - Formulate strategies for minimizing the possibility that staff becomes ill: e.g., working from home even in very early stages of a pandemic, or other social distancing measures; - Develop home working and/or distant working options for critical staff like work from home with ICT means (internet, computer, intranet etc.). 	Throughout project lifecycle	MRV	OCAC/SCCO
Planning for shortages of supplies that affect business operations	<ul style="list-style-type: none"> - Consider the need for ensuring adequate availability of essential supplies; - Discuss with key suppliers a plan for regular shipments in the event of shortages or disruptions in transportation systems. 	Throughout project lifecycle	MRV	OCAC/SCCO
Protect staff and visitors from getting sick	<ul style="list-style-type: none"> - Restrict workplace entry of people with pandemic symptoms; - Manage staff that becomes ill at work; - Provide awareness for staff to practice good personal hygiene, such as hand washing, coughing etiquette, etc., by bulletins and posters; - Increase social distancing (e.g., enable e-working, avoid hand to hand/face to face contact); - Manage staff that travels overseas; - On declaration of a pandemic in country, place notices at all workplace / facility entry points, advising staff and visitors not to enter if they have pandemic symptoms. 	Throughout project lifecycle	MRV	OCAC/SCCO
Personal hygiene	<ul style="list-style-type: none"> - Reinforce basic personal hygiene measures and encourage people to practice them to minimize potential pandemic transmission. 	Throughout project lifecycle	MRV	OCAC/SCCO

Control and mitigation actions	Description	Implementation schedule	Responsibility for implementation	Supervision
Workplace cleaning	<ul style="list-style-type: none"> - Increase cleaning frequency of environmental surfaces (hard surfaces that frequently touched by hands) with a neutral detergent; - Increase the frequency of routine maintenance and cleaning of air conditioning system; - Increase the frequency of washrooms/ toilet cleaning. 	Throughout project lifecycle	MRV	OCAC/SCCO
International and domestic travel	<ul style="list-style-type: none"> - Strictly follow the Company recommendations at the time of the outbreak. 	Throughout project lifecycle When travelling	MRV	OCAC/SCCO
Relocation/ repatriation of staff and dependents	<ul style="list-style-type: none"> - Liaise with Head Quarter in Milan to consider all aspects of the response including the relocation of staff members and any eligible family members on international assignment; - Screen staff and/or dependents about to be relocated by the Company doctor/nominated doctor before their departure in attempt to decrease the risk of spread of disease through their movement; - Until the pandemic alert has been officially declared over, all staff remaining in the country should increase self-health care. Consult Company's doctor in case of any health concern. 	Throughout project lifecycle When needed	MRV	OCAC/SCCO
Healthcare & emergency response	<ul style="list-style-type: none"> - Ensure sufficient stock of analgesic, anti-pyretic and antibiotic at distant, and offshore locations (FLNG); - Ensure sufficient stock of required medicines (pandemic specific and general medicines). These drugs will be of value in a pandemic in case of shortage in the market; - Administer vaccine to employees for protection against endemic and/or pandemic diseases (if available and recommended by health authorities); - Use appropriate PPE used by all healthcare workers at risk of exposure to possible cases; - Inform Contractor's doctors (offshore, distant locations, etc.) of pandemic preparedness plans and respective measures; - Make avail disposable masks for situations where regular work practice become unavoidable. 	Throughout project lifecycle	MRV	OCAC/SCCO

9.5.7.5 Health Personnel, Equipment, and Transport

All company premises are equipped for the management of a potential medical emergency and assistance, as per the information provided below.

Health staff

Health staff working at the onboard FLNG clinic will include:

- Two back-to-back highly qualified medical emergency doctors;

- Two back-to-back paramedics;
- Two back-to-back nurses;
- Certified first aiders.

Equipment and medical facilities for all sites

The FLNG field clinic is equipped to provide advanced life support and stabilization of medical emergency conditions. The onboard medical facilities are equipped with:

- Waiting room;
- Doctor office (two cupboard with shelf 1200*600);
- Consultation desk with consultation area;
- Fou hospital bed (2100*900);
- Isolation room with two beds (2100*900);
- Medical store with four cupboards / shelves (1100 * 600);
- Storage area;
- Mortuary.

The Coral North’s medical facility (Figure 9.4) will be a copy of the Coral South medical facility.



Figure 9.4: Onboard medical facilities

Transport

Emergency medical transportation will be ensured through two suitable helicopters, as specified by local law and international standards. In case there is multicausality onboard or unavailability of the helicopter for the medical evacuation (MEDEVAC), supply vessels can be used.

9.5.7.6 MEDEVAC and Medical Emergency

Medical emergency is defined in levels, as follows:

- Level 1: Is an emergency that can be dealt with by the facilities / resources available at site;

- Level 2: Is an emergency that requires the involvement of the Company Emergency Response Team and external local resources (country) in addition to facility /resources available at site;
- Level 3: Is an emergency that requires the involvement of the Company Emergency Response Team, Eni Spa designated managers, and other external international resources.

MEDEVAC process

In the case of a medical event on the Coral North FLNG, the actions and/or steps to be followed are:

- First responder or bystander should inform the on-site doctor;
- On-site doctor should perform the initial assessment and stabilization of the patient, assess the severity of the case and decide the level of emergency or initiate a secondary medical evacuation;
- In case of medical evacuation, the on-site doctor should inform the ERB health manager about the need for a medical evacuation to initiate the process;
- Offshore Installation Manager (OIM) activates the MERP in order to organize all logistical aspects related to the transportation of the patient from the ship to Pemba. The contractor focal point should be informed following the MERP flowchart to ensure activation of the contractor's medical provider and ambulance;
- In the meantime, the on-site doctor should liaise with the ERB health manager about the patient's condition, transportation needs and keep him/her updated on the development of the case;
- ERB health manager activates the Pemba emergency doctors to make all arrangements to ensure smooth transportation of the patient from the airport to the referral clinic. Written consent to board the patient on the helicopter must be provided by the OIM to the Aviation Advisor;
- If the patient is an employee of Coral FLNG, the company's MERP will be followed, and the patient will be transferred to the referral clinics on the ground where they will receive definitive care or stabilized pending transport to a tertiary medical facility. The health manager must be in constant contact with the referral clinic so that the patient can be treated promptly;
- If the patient is an employee of the contractor, the contractor's health manager must arrange for the ambulance and activation of their medical provider. Upon arrival at the airport, the patient must be transferred to the contractor's medical provider. The transfer point will be the airport and from there the ERB's responsibilities end. In the meantime, the health manager must inform Human Resources to notify the next of kin of company employees. After the event, the health manager must complete all reporting requirements.

Medical emergency response times

Medical Emergency response times should meet the following times:

- 4 minutes – life saving first aid;
- 20 minutes – fully trained & certified first aider;

- 60 minutes – paramedic or site doctor;
- 6 hours – specialist or hospital doctor.

Referral medical facilities

The reference medical facilities for secondary evacuation are listed below.

Maputo

For reference secondary MEDEVAC in Maputo, ERB has a contract with 2 private clinics, namely:

- Instituto do Coração – ICOR:
 - Location: Avenue Kenneth Kaunda No. 111, Maputo, Mozambique;
 - Emergency numbers:
 - +258 848888 (Only Vodacom);
 - +258 823388 (Only MCell).
 - Information contacts:
 - (+258) 21411000;
 - (+258) 21411028/44;
 - (+258) 823274800;
 - (+258) 843274800.
 - Emails:
 - instituto.coracao@tvcabo.co.mz
 - recepcao@icor.co.mz
- Maputo Private Hospital
 - Location: Rua do Rio Inhamiara, Sommerschild II.
 - Contact details:
 - Tel.: +258 21488600;
 - Fax: +258 21493680;
 - Email: info@lenmed.co.za

Pemba

For reference secondary MEDEVAC in Pemba, ERB has a contract with two private clinics namely:

- International SOS Clinic:
 - Location: located within the premises of Pemba Beach Hotel. Avenida da Marginal, Pemba Beach Resort grounds, Contractors Entrance, Pemba, Mozambique;
 - Contact: +258 827093642/ +258 872727738
 - Email: cmo.pemba@internationalsos.com
- Clidis (Medilink) Clinic
 - Location: Av. Eduardo Mondlane, Edifício HNS, Piso 1, Pemba, Mozambique;
 - Contact: +258 822792878 / +258 842768 958 / +258 842703939;
 - Email: clidis@clidis.co.mz
 - MPM 24-hour number: +258 856052880/863008150
 - MPM email: pembaclinic@medilinkint.com

Reference medical facilities for tertiary evacuation will be organized and decided by the Health Manager and headquarters.

Mission abroad scenario

In case an employee gets sick or injured during a mission abroad the company has membership with external medical provider. The employee in mission can use the International SOS worldwide medical assistance.

For this purpose, the IP should first call the primary International SOS assistance centre, communicating the Membership number (see Figure 9.5) and follow the instructions of the ISOS operator.

in destination where is not present an eni medical facility, call **Alarm Center** (available 24 hours a day by medical staff and multilingual staff for logistic support) by calling **+33155633785** and providing name, surname and company affiliation and with quoting **15ACMA000060**.

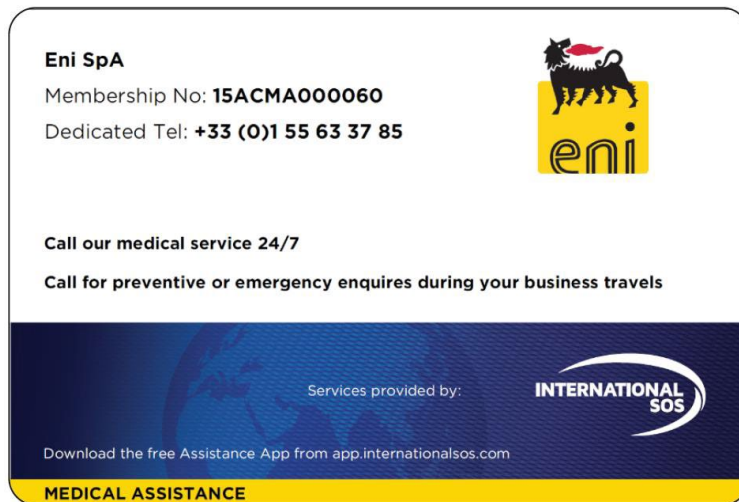


Figure 9.5: Medical emergency numbers for employees on a mission abroad

9.5.8 Cyclone Response Plan

A Cyclone Response Plan (CRP) is applicable to the drillship, supply vessels, subcontractor vessels, and for the operation phase of the FLNG facility during operations.

In cyclone emergency situations, Contractor(s), in consultation with Emergency Response Centre (ERC) and PSV Masters has the responsibility and authority to organise and execute the required actions in the field, ensuring that appropriate action is taken in response to severe weather forecasts with particular reference to cyclones.

For the operation phase, the plan presents the measures necessary to ensure a planned evacuation of facilities and vessels within the area of operation, ensuring a safe and orderly evacuation of personnel in the event of a cyclone impinging upon the operation of an installation or vessel located within the area of operation. This plan serves as a tool necessary for management to take the appropriate decisions during a cyclonic event, by:

- Providing a logical document that will be used by management of the FLNG Operator in order to make the most suitable decisions in case of cyclones and cyclones predictions;
- Minimising, as far as reasonably practicable, the consequences to human life, environment, FLNG Operator assets, business, and reputation in case of an emergency, by ensuring an effective and efficient response;
- Ensuring the availability of adequate information;
- Ensuring efficient management of the CRP through all dedicated resources and existing ERP.

This plan provides a strategic cyclone response for the Coral North FLNG operations as follows:

- Systems to be reviewed and for which operational actions are required ;
- Step-by-step response plan for the following response scenarios:
 - Normal Production and partial de-manning;
 - Production shutdown and shelter in place;
 - Production shutdown and partial de-manning;
 - Production shutdown and total de-manning.

The CRP will be activated on the forecast of a relevant cyclone, as per Table 9.48.

Table 9.48: CRP actions, description, and implementation schedule

Action	Description	Implementation Schedule	Responsibility for Implementation	Supervision
Act on forecasted cyclone	- If any cyclone is forecasted, act immediately. Follow procedures described in the CRP based on system operability limits and wind speed	Whenever necessary	Contractor / FLNG Operator	ECO / OCAC

9.5.9 Cumulative Impacts Management Framework

Implementing an effective strategy to manage cumulative impacts entails many challenges, including:

- Limited information on concurrent developments in the project region;
- Valued Environmental and Social Components (VECs) may be assigned different priorities by different stakeholders;
- Lack of information on VEC baseline conditions and thresholds;
- Impact attribution is often dominated by uncertainty and individual project proponents accepting responsibilities for impact management is not always straightforward;
- Attempting to influence government and other project developers can be an overwhelming task with negligible results; and
- Project developers may not be interested in sharing data collaboratively or defining mitigation strategies jointly.

In addition, specific challenge to cumulative impact management for the Coral North Project include the regional armed violence instability in northern Cabo Delgado Province. Although the situation

has improved in recent months, the impact on Cabo Delgado’s society and the restrictions on stakeholder engagement are still severe.

Despite these challenges and the collaboration required to manage cumulative impacts and the number of stakeholders involved, MRV through the OSECPs will apply best efforts to establish and maintain a constructive relationship with government and other stakeholders and gain agreement on clear roles and responsibilities from the onset.

9.5.9.1 Proposed Actions

Table 9.49 lists the mitigation measures under MRV’s control to minimize cumulative impacts on VECs.

Table 9.49: Mitigation measures under MRV’s control

VEC	Cumulative impact	Key mitigation / optimization measures / commitments for development under MRV’s control
GHG emissions and contribution to climate change	Emissions from fuel usage in the marine vessels and helicopters, GTG/GTC, thermal incinerator and flaring; fugitive emissions	Implement the Air Quality and GHG Emissions Management Plan for FLNG Operations (section 9.3.1)
Marine biodiversity (high biodiversity value species and habitats)	Underwater noise, in particular the noise from thrusters	Implement the Biodiversity Management Plan for FLNG Operations (section 9.3.5) Implement the Navigation Management Plan
	Oil spill risk associated with accidental unplanned events, such as vessel collisions Release of gas condensate due to a blowout of the wellhead on the seabed	Implement the Security Master Plan (section 9.5.11) Implement the Oil Spill Contingency Plan (OSCP) (section 9.5.7.1) Implement the Blowout Emergency Response Plan (section 9.5.7.2)
Employment, skills transfer, business opportunities	Cumulative increase of jobs, skill transfer and economic stimulation	Implement the Sustainability Plan / Local Content Plan (section 9.5.4) Implement the Work Force Plan (section 9.5.5)
Revenue	Cumulative increase of national revenue	Implement the Environmental and Social Training (section 9.5.6)

For those measures requiring collaborative engagement with relevant stakeholders, the engagement with relevant stakeholders and proposed topics of discussions shall be included in the OSECP.

Table 9.39 recommends the actions in engaging with other oil and gas operators, through the Mozambican Association of International Oil and Gas Operators (AMOPI), relevant authorities, and civil society the joint management of cumulative impacts.

Table 9.50: Proposed engagement actions for cumulative impact management

Target stakeholders	Engagement action	Frequency timeframe	Methods proposed (objectives)	Means of verification	KPIs
AMOPI, O&G operators, O&G authorities and regulator, Provincial authorities	- Engage with other O&G stakeholders, through AMOPI.	Once off, prior to operations phase Repeated as required,	Formal meeting (collaborate – participation)	Attendance list Minutes of Meetings (with agreed upon commitments)	1 meeting

Target stakeholders	Engagement action	Frequency timeframe	Methods proposed (objectives)	Means of verification	KPIs
		depending on results from initial engagement.			
	<ul style="list-style-type: none"> - Shared efforts to mitigate and monitor cumulative impacts on tourism, biodiversity, public health, economic stimulation, employment, and training (collaborate with other O&G operators, through AMOPI, to discuss shared efforts to address the O&G sector cumulative impacts). 	Once every two years.	Workshop (Collaborate – participation)	Attendance list Minutes of Meeting (with agreed upon commitments)	1 workshop every two years starting in 2024
AMOPI, O&G operators, O&G authorities and regulator, marine navigation authorities, provincial authorities, Pemba port authorities, Pemba airport authorities	<ul style="list-style-type: none"> - Transportation routes and shipping lanes (collaborate with other O&G stakeholders, through AMOPI, to attempt to establish common transportation routes). - Linkages and synergies between OSCP (collaborate with other O&G stakeholders, through AMOPI, to attempt to establish linkages and synergies between different projects' OSCP). 	Once off, prior to operations phase	Formal meeting (Collaborate – participation)	Attendance list Minutes of Meetings (with agreed upon commitments)	1 meeting

9.5.9.2 Monitoring and Reporting

MRV will perform annual audits to verify the implementation of the respective plans identified in Table 9.49 that address the Project’s cumulative aspects. An audit report shall be prepared and presented to responsible and accountable parties for implementation of corrective actions. Furthermore, the outcomes of these audits, depending on relevance, may be used to guide discussions and engagement with stakeholders on matters related to management of cumulative impacts.

9.5.10 Occupational Health and Safety

The Coral North Project Vision for personnel health and safety is that “Nobody Gets Hurt”.

To achieve this vision, the Coral North Project aims for a workplace culture in which people accept that they are all leaders for safety and occupational health, and personally committed to the following:

- Incident and injury free environment where people are safe from injury and work together to protect themselves and each other;
- Workplace where people can freely express their concerns and listen willingly to better ways of working safely;
- Environment where people actively avoid safety and occupational health risks through training, use of safe practices, the identification and correction of hazards and learning from others’ experiences;
- Variety of risk assessment processes are used in design, construction and operation to identify safety and occupational health risks to people.
- Hierarchy of risk controls is then applied to eliminate (physically remove the safety or health hazard), substitute (replace the hazard), apply engineering controls (isolate people from the hazard), apply administrative controls (changing the way people work), and lastly use Personal Protective Equipment (PPE). All people present on board shall have, at least, the helmet, safety shoes, safety goggles, gloves and Nomex
- Willingness to be safe away from work and share safety with others outside of the project.

The protection of the health and safety of personnel working in the project, in connection with the assigned activities will be ensured across the different project phases through the following:

- Identification of the risks for the health and safety of the personnel working on the project, specific to the working environment and activities;
- Ensuring proper procedures and training requirements are identified in order raise employee risk awareness and to adopt safety measures in the execution of the tasks to remove or minimise risks;
- Adequate measures are identified to intervene promptly in case of injury to personnel, including provision of medical provision on the working sites, training of personnel with respect to first aid, emergency actions, medical rescue and evacuation to appropriate facilities;
- General rules relating to personnel health and safety are included in the MRV’s HSE Golden Rules
 - Driving safety;
 - Management of change;
 - Lifting operations;
 - Fire safety;
 - Working at height;
 - Energised systems;
 - Excavation safety;
 - Permit to work;

- Health management;
- Waste management;
- Confined space;
- Hydrogen sulphide.

The Occupational Health, Industrial Hygiene and Medical Support Program (OHMSP) includes the following minimum design and operational requirements:

- Health risk assessment;
- Industrial hygiene with workplace monitoring programs;
 - Threshold limit values for worker exposure to chemicals;
 - Toxicological combined effects;
 - Sources, protection and prevention measures from biological risks including legionella;
 - Heat stress, hot and cold surfaces;
 - Protection facilities for operators;
 - Lighting;
 - Water quality and availability for human consumption;
 - Noise and vibration;
 - Radioactive sources.
- Maintenance and management of personal protective equipment;
- Health and safety training and competency assurance;
- Fitness to work and health surveillance programs;
- Medical attention, medical support facilities; equipment, personnel, multi-casualties and pandemic management;
- Medical Emergency Response Plan including medical evacuation;
- Medical Support Study and Plan.

9.5.11 Security Master Plan

The MRV and FLNG Operator's Security Master Plan applies to their activities and the local environmental changes considering local legislation, international best practice on security and human rights, namely IFC's Performance standards, IPIECA and United Nations Voluntary Principles on Security and Human Rights.

The following control and mitigation measures will be implemented during the operations phase by MRV and/or FLNG Operator and supervised by the ECO / OCAC / SCCO:

- Assessment of security risks;
- Security operational management;
- Continuous monitor of assets access control;
- Anti-intrusion system;
- Implementation and monitoring of exclusion zone and early warning;

- Training and awareness on human rights and security for local security forces and contractors;
- Implementation of journey management;
- Continuous communication among company, private security, and government;
- Adopt rules of engagement that limit the use of force and firearms;
- Hold regular meetings with public security;
- Ensure armed security contractors are procured in a transparent manner;
- Ensure armed security services strictly adhere to MRV's approach to human rights and security, including Code of Ethics, "Respect for Human Rights in Eni", suppliers code of conduct and MRV's strategies and actions to minimize risks deriving from security forces;
- Ensure accountability processes, including the GM are in place to ensure redress in cases of abuse; and
- Actively engage with and ensure relevant project information is fed into both the national and provincial VP working groups lead by the partnership between the *Centro para Democracia e Desenvolvimento* (CDD) and the Geneva Centre for Security Sector Governance (DCAF).

10 Assessment and Improvement

This section outlines the assessment and improvement processes associated with this EMP. The inspection, monitoring, audit, corrective action, and improvement activities form an integral part of implementing the EMP, and are necessary to:

- Verify and document the management and implementation of the EMP mitigation ;
- Monitor and document the effectiveness of the mitigation measures and assess the actual impacts;
- Demonstrate compliance with applicable legal and other requirements;
- Evaluate the effectiveness of the ESMS; and
- Highlight areas to drive continuous improvement for all EMP activities.

10.1 Inspection

Contractors will be required to implement field-based inspection programs that demonstrate implementation and the effectiveness of the mitigation measures. The Project will inspect the Contractors' documents to verify implementation of the required programs.

HSE inspections are conducted by the HSE team on a daily basis onboard the FLNG. Weekly HSE walkdowns are conducted by the onboard FLNG management team. Further information is provided in the Offshore HSE Manual.

10.2 Auditing

MRV will organize for independent audits to be performed by certified institutions throughout the Project's lifecycle.

Audits will also be carried out periodically by the Project to ensure compliance with EMP requirements, regulatory requirements, and management systems, standards, policies, and procedures.

The internal compliance audits will be carried out according to relevant HSE auditing procedure with the scope and frequency defined in the "HSE audit program" for any given year, on a minimum annual basis.

Periodic environmental audits are required as established by the Regulation on Environmental Audit Process, Decree No. 45/2024, of June 26th. The audit report shall be submitted to MAAP (AQUA).

Audits will be performed by qualified staff, and results will be described in a report that will determine the severity of non-compliances, as well as the recommended remedial action. Legal environmental non-compliances will be communicated to the competent environmental authority.

Regular checks and audits will be undertaken by MRV, including periodic audits of Contractors and/or subcontractors, on an as need basis. MRV will be responsible for monitoring, surveillance, and

decision-making on all operational HSE matters. In addition to assessing operational aspects and monitoring, checks will assess compliance with EMP objectives and targets, and the effectiveness of implementation. Therefore, the EMP will be subject to ongoing review and development to ensure that it remains appropriate to all aspects of the project.

All findings will be reviewed by the relevant project team and, where corrective actions are deemed necessary, specific actions with designated responsibility and timing will be developed and aimed at achieving continuous improvement in performance. These shall be documented.

Regular feedback meetings will be scheduled with stakeholders to provide feedback on performance and results of monitoring activities for the duration of the proposed project.

10.3 Corrective Actions and Improvement

As part of the EMP, the Project will implement a formal E&S tracking system that will include the details of all E&S non-conformances, identify the corrective actions required, assign actions and timings to responsible parties, and indicate the status of the actions. This will ensure a coordinated approach between the Project and Contractors, and drive changes for continuous improvement. The HSE department is the custodian of the action tracking system.

11 Reporting

This section outlines the reporting and notification requirements of the EMP. MRV, FLNG Operator, and Contractors will work closely together to identify and agree on Project notification and reporting requirements. It is envisaged that reporting will cover at least the following areas:

11.1 Regular Reporting

The different Contractors involved in the project phases will work closely with MRV prior to the commencement of work to define the structure, content, and format for their E&S monthly report. This report will contain key information around the Contractors' implementation of the E&S requirements and mitigation measures and will cover, among others the following:

- E&S and improvement findings;
- Incident notifications;
- Non-conformances and/or non-compliances and corrective actions;
- KPIs;
- Details of any E&S surveys or studies including the results of routine monitoring; and
- E&S training conducted.

The E&S performance throughout the different project phases, in compliance with the EMP, will be reported biannually to DINAB, INP, SPA, and AQUA as well as information regarding areas of concern, measures adopted and conformity to the adopted environmental standards. MRV will prepare and submit a Project E&S Performance Biannual Report to the relevant government department, throughout the entire project life cycle. This biannual report will document key information on the Project's performance against the EMP requirements.

FLNG Operator will prepare and submit a Project E&S Performance Report to the involved parties, as appropriate, on a regular basis.

The Project's E&S performance is reviewed by the top management at least yearly at the HSE Management Review Meeting as foreseen by the HSE Management Review Procedure. The outcomes of this meeting are captured in the HSE Management Review Report.

11.2 Incident Notification and Reporting

Contractors will notify MRV immediately following any E&S incident adhering to the requirements of the Incident Notification, Investigation and Reporting Procedure. This procedure sets the definitions of different incident types/classification, roles and responsibilities, notification process, investigation process and reporting format.

MRV will ensure that all E&S incidents are appropriately documented that relevant parties are notified, and that reporting requirements around the incident are met.

For all uncontained releases, MRV, the FLNG Operator, and Contractor will provide the following additional information:

- Response time;
- Clean up requirement; and
- Outcome and initial assessment of E&S impact.

11.3 Statutory Notifications and Reporting

MRV, FLNG Operator and Contractors will meet all statutory notification and reporting requirements.

Appendix I – Biodiversity Monitoring Program

CORAL NORTH DEVELOPMENT PROJECT

ENVIRONMENTAL IMPACT STUDY

BIODIVERSITY MONITORING AND EVALUATION PROGRAM

Mozambique Rovuma Venture S.p.A.

Rua dos Desportistas, Nº 918
Edifício JAT V-3, 1º a 4º Andar
Maputo, Mozambique
Tel.: +258-21-344-533
Fax: +258-21-49-7230

Consultec - Consultores Associados, Lda.

Rua Tenente General Oswaldo Tazama, No. 169
Maputo, Moçambique
Phone: +258 21 491 555
Email: consultec@consultec.co.mz

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LIST OF ACRONYMS AND ABBREVIATIONS

ADI	Area of Direct Influence
All	Area of Indirect Influence
AoI	Project Area of Influence
BESAAP	Biodiversity and Ecosystem Services Assessment and Action Plan
BMEP	Biodiversity Monitoring and Evaluation Program
CCR	Central Control Room
CDS	Conventional Distance Sampling
CHA	Critical Habitat Assessment
CHSA	Critical Habitat Screening and Assessment
E&S	Environmental and Social
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
ESAS	European Seabirds at Sea
FHG	Functional Hearing Group
FLNG	Floating Liquefied Natural Gas
GPS	Global Positioning System
HF	High Frequency
HSE	Health, Safety and Environmental Manager
IMCA	International Marine Contractors Association
JNCC	Joint Nature Conservation Committee
LF	Low Frequency
LNGC	Liquefied Natural Gas Carriers
MFO	Marine Fauna Observer
NMFS	United States National Marine Fisheries Service
OCAC	Environmental Control and Communication Officer
PTS	Permanent Threshold Shift
ROV	Remotely Operated Vehicle
SoW	Scope of Work
SPUE	Sightings Per Unit of Effort
TTS	Temporary Threshold Shift
VHF	Very High Frequency

1 Introduction

1.1 Background

This Coral North Biodiversity Monitoring and Evaluation Program (BMEP) has been prepared based on the Coral South BMEP marine fauna monitoring activities (Consultec 2019) which was updated in 2022 (Consultec 2022). The main objectives of the Coral North BMEP are as follows:

- Design a long-term monitoring program which enables the Coral North Project to assess the effectiveness of mitigation measures and the accuracy of previous biodiversity assessments, in particular the results from the Coral North Critical Habitat Screening and Assessment (CHSA);
- Improve the understanding and validate the predicted impacts on biodiversity including those potentially arising from the following main project activities:
 - Discharge of vessel and FLNG effluents;
 - Underwater noise;
 - Artificial lighting;
 - Vessel movement.
- Monitor the success of proposed mitigation measures, and
- Identify new impacts or deviation from expected impacts (if any), by identifying new ecological values or previously unconsidered factors and define new mitigation measures and action plans where necessary, as part of an adaptive management plan.

The BMEP describes the guidelines to collect, analyse, report data, and act according to specific results, which may require the reevaluation or implementation of additional mitigation measures designed to avoid and/or reduce biodiversity impacts.

While the potential impacts to biodiversity were assessed during the EIA process as low to very low, as best practice, the following programs will be implemented to monitor any potential changes to biodiversity:

- **Marine Fauna Monitoring Program:** annual program to monitor the general impacts of the project such as attraction and avoidance effects and possible variation on the spatial and temporal use of the area by marine fauna, including globally threatened species. As the environmental baseline information has provided a “snapshot in time” of the presence of marine fauna in the vicinity of the Coral North project, the data collected during the Coral North monitoring program as well as the Coral South monitoring program will enable a better understanding of the biodiversity associated with the Coral Field;
- **Bird Strike and Stranding Monitoring Program:** monitoring program to assess bird strike or stranding on the FLNG installation, mainly due to illumination impacts during the operational phase;
- **Collision Monitoring Program:** Monitoring program related to vessel collision with cetaceans, turtles, and fish;

- **Entanglement Monitoring Program:** Monitoring program related to the risk of entanglement by marine fauna, particularly turtles;
- **Underwater Noise Monitoring Program:** Monitoring program related to the effects of underwater noise on marine fauna.

The intent of the monitoring programmes is to design the works to be repeatable with a control (reference) area(s) designated outside the Project’s area of influence (Aol) to compare against possible changes that may arise from non-Project related anthropogenic and/or natural effects. As far as possible, statistical methods will be used for the data analysis (such as General Linear Models, Analysis of Variance, ANOVA’s) recognising the natural variability with marine fauna populations.

1.2 BMEP Priorities

The BMEP shall focus on sensitive species of birds, cetaceans, turtles, and fishes identified for the Project Aol (Table 1.1), particularly those with conservation status (IUCN, 2023). Nevertheless, data on other species shall also be collected during the monitoring actions and used to characterise marine fauna assemblages and gain a better understanding of the overall offshore marine environment.

Table 1.1: Priority fauna identified for the Coral North Project

Class / Species	Common name	IUCN Red List status 2023	Criteria of Critical Habitat Screening*
Mammalia			
<i>Balaenoptera borealis</i>	Sei whale	Endangered	1
<i>Balaenoptera musculus brevicauda</i>	Pygmy Blue whale	Endangered (species) / subspecies status not assessed	1, 2
<i>Balaenoptera physalus</i>	Fin whale	Vulnerable	-
<i>Megaptera novaeangliae</i>	Humpback whale	Least Concern	-
<i>Physeter macrocephalus</i>	Sperm whale	Vulnerable	-
<i>Sousa plumbea</i>	Indian Ocean Humpback Dolphin	Endangered	-
Reptilia			
<i>Caretta caretta</i>	Loggerhead turtle	Vulnerable	-
<i>Chelonia mydas</i>	Green turtle	Endangered	1
<i>Dermochelys coriacea</i>	Leatherback turtle	Vulnerable / Critically Endangered	1
<i>Eretmochelys imbricata</i>	Hawksbill turtle	Critically Endangered	1
<i>Lepidochelys olivacea</i>	Olive ridley	Vulnerable	-
Aves			
<i>Morus capensis</i>	Cape gannet	Endangered	1, 2
<i>Hydroprogne caspia</i>	Caspian tern	Least Concern	-
<i>Onychoprion fuscata</i>	Sooty tern	Least Concern	-

Class / Species	Common name	IUCN Red List status 2023	Criteria of Critical Habitat Screening*
<i>Onychoprion anaethetus</i>	Bridled tern	Least Concern	-
<i>Sternula albifrons</i>	Little tern	Least Concern	-
<i>Sterna dougallii</i>	Roseate tern	Least Concern	-
<i>Sterna hirundo</i>	Common tern	Least Concern	-
<i>Thalasseus bengalensis</i>	Lesser crested tern	Least Concern	-
<i>Thalasseus bergii</i>	Greater crested tern	Least Concern	-
<i>Thalasseus sandvicensis</i>	Sandwich tern	Least Concern	-
<i>Larus hemprichii</i>	Sooty gull	Least Concern	-
<i>Larus dominicanus</i>	Kelp gull	Least Concern	-
<i>Larus fuscus</i>	Lesser black-backed gull	Least Concern	-
<i>Chroicocephalus cirrocephalus</i>	Grey-headed gull	Least Concern	-
Chondrichthyes			
<i>Carcharhinus longimanus</i>	Oceanic white tipped Shark	Critically Endangered	1
<i>Rhincodon typus</i>	Whale Shark	Endangered	1
<i>Sphyrna lewini</i>	Scalloped Hammerhead	Critically Endangered	1
<i>Sphyrna mokarran</i>	Squat-headed Hammerhead Shark	Critically Endangered	1
Sarcopterygii			
<i>Latimeria chalumnae</i>	Coelacanth	Critically Endangered	-
Actinopterygii			
<i>Katsuwonus pelamis</i>	Skipjack Tuna	Least Concern	-
<i>Thunnus alalunga</i>	Albacore Tuna	Least Concern	-
<i>Thunnus obesus</i>	Bigeye Tuna	Vulnerable	-

Note: * Criterium 1 – Critically Endangered or Endangered species; Criterium 2 – Endemic / restricted range species; Criterium 3 – Globally significant concentration of migratory / congregatory species.

1.3 BMEP Area

Marine mammals have different sensitivities to noise with low-frequency (LF) cetaceans (predominantly baleen whales) most sensitive to low frequencies in the range 7 Hz to 35 kHz. High-frequency (HF) cetaceans have optimum sensitivity over the range 150 Hz to 160 kHz; while very high frequency (VHF) cetaceans are sensitive to high frequencies across the range 275 Hz to 160 kHz. The latest functional hearing group (FHG) classification for species relevant to Area 4 is given in Table 1.2.

Table 1.2: Functional hearing groups for marine mammal species known or may be present within Area 4

Functional hearing group	Representative species in Area 4
Low-frequency cetaceans (LF)	Pygmy blue whale; humpback whale
High-frequency cetaceans (HF)	Sperm whale; Cuvier's beaked whale; Risso's dolphin; Indian Ocean humpback dolphin; common bottlenose dolphin; Indo-Pacific bottlenose dolphin; Pantropical spotted dolphin; spinner dolphin; striped dolphin; Pygmy killer whale; short-finned pilot whale.
Very high-frequency cetaceans (VHF)	Pygmy sperm whale; dwarf sperm whale
Sirenia (SI)	Dugong

As assessed from the EIA underwater acoustic noise study, the maximum area of direct influence (ADI) of the Coral North FLNG Project on marine fauna is an area with a 33.1 km radius centred on the FLNG site, where Level B behavioural impacts from underwater noise emissions from the intermittent use of the FLNG thrusters may affect marine mammals (United States National Marine Fisheries Service [NMFS]). The greatest distance for Temporary Threshold Shift (TTS), physiological impacts, for VHF marine mammals is 8 km over a 15-hour period of FLNG operational noise. Permanent Threshold Shift (PTS) is within a few metres of the FLNG. The modelled distance of TTS, PTS, and Level B harassment for the marine mammal functional hearing groups is provided in Table 1.3.

Table 1.3: Summary of maximum impact ranges in metres over all transects for marine mammals in the Area 4 region when exposed to FLNG operational noise

Functional hearing group	Impact	Threshold	Maximum impact range [metres]					
			0.5 hr	1 hr	2 hr	4 hr	8 hr	15 hr
M _{lf}	PTS	199 dB re 1 μ Pa ² .s	<10	43	51	100	129	200
	TTS	179 dB re 1 μ Pa ² .s	357	510	750	1050	1500	2050
M _h	PTS	198 dB re 1 μ Pa ² .s	<10	<10	<10	<10	<10	<10
	TTS	178 dB re 1 μ Pa ² .s	43	51	86	102	172	215
M _v	PTS	173 dB re 1 μ Pa ² .s	51	51	102	153	215	258
	TTS	153 dB re 1 μ Pa ² .s	561	784	1950	2989	4730	7956
M _{si}	PTS	206 dB re 1 μ Pa ² .s	<10	<10	<10	<10	<10	<10
	TTS	186 dB re 1 μ Pa ² .s	<10	<10	51	51	102	153
All	Level B	120 dB re 1 μ Pa rms	33100					

As such, the monitoring actions of the BMEP will cover the following areas as shown in Figure 1.1:

- ADI with a radial extent of 33.1 km from the FLNG,
- Navigation and helicopter corridor as well as its immediate surroundings
- Control area.

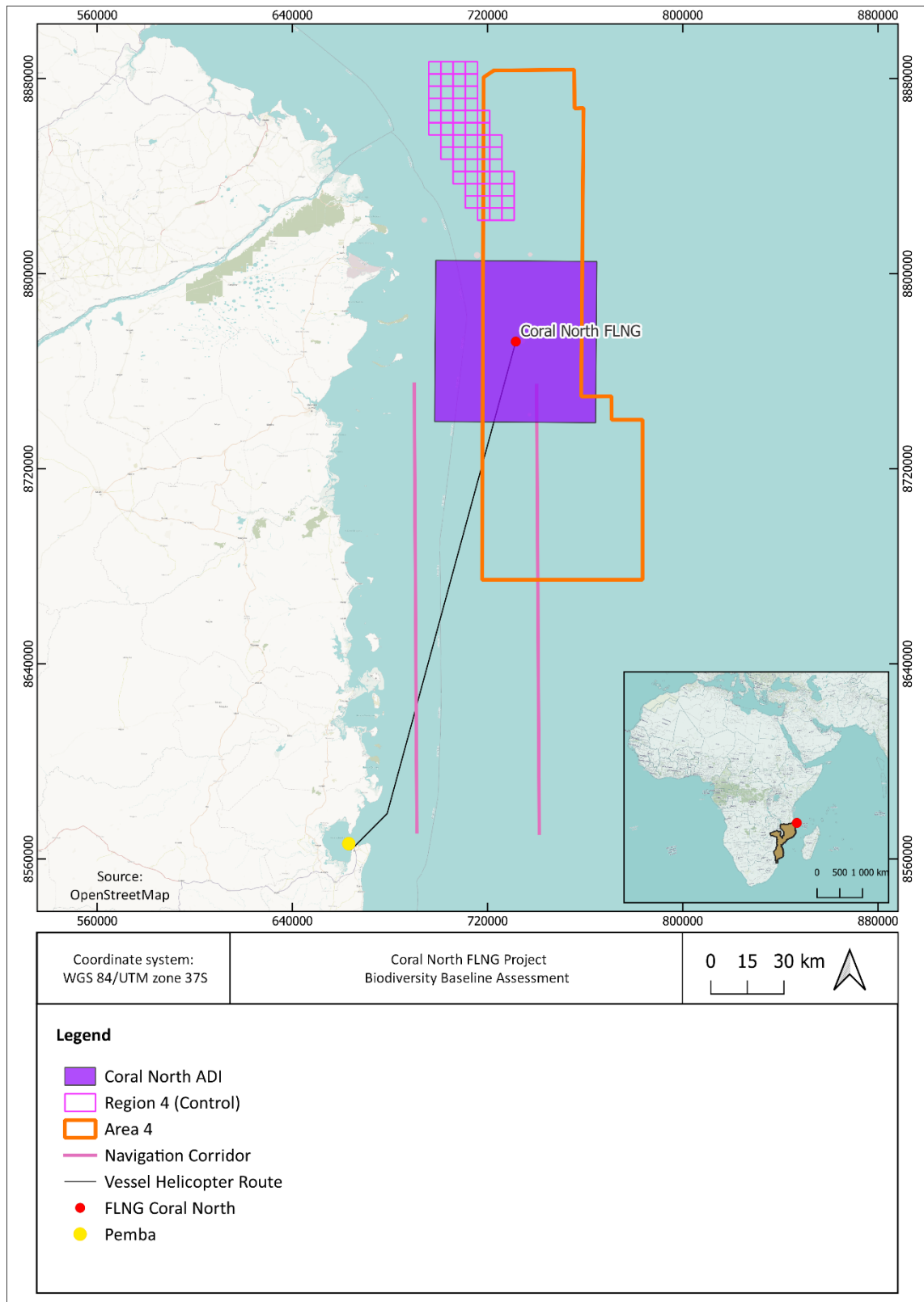


Figure 1.1: Area of Direct Influence of the project, including the navigation and helicopter corridor and shipping route

2 Roles and Responsibilities

MRV, as the Proponent, will retain the ultimate responsibility for the conduct of the respective petroleum operations and for all activities related to Coral North Project. MRV is ultimately responsible for implementation of all requirements specified in this BMEP.

MRV may designate Contractors and/or subcontractors to be carry out some monitoring actions under the BMEP; however, this will be under the direct supervision and final accountability of MRV.

MRV shall appoint a Health, Safety, and Environmental Manager (HSE) who is responsible for management plans, and who delegates implementation responsibilities to the MRV Environmental Control and Communication Officer (OCAC), and to the Contractor. Both will be responsible for the implementation of monitoring actions. The OCAC will also be responsible for managing all databases resulting from the monitoring actions.

The Contractor will appoint an Environmental Control Officer (ECO) who will be responsible for the implementation of the monitoring plan. The ECO shall report to the OCAC and ensure that the monitoring actions set out in this BMEP under the responsibility of the Contractor are performed as specified within. If required, the Contractor will employ subcontractors, such as Marine Fauna or Mammal Observers that must have the necessary specialist experience.

If during monitoring actions a situation arises whereby the need for an adaptive response is identified, the OCAC will proceed accordingly to the respective monitoring program. The OCAC will document the event and corresponding responses undertaken to manage the incident.

The monitoring actions identified in this BMEP will be carried out by trained and experienced personnel. Table 2.1 shows the entity responsible for supervision and implementation of each of the monitoring actions.

Table 2.1: Monitoring actions and responsible party

Monitoring Action	Biodiversity Component	Responsibility for Implementation	Responsibility for Supervision
Marine fauna surveys	Seabirds, cetaceans, turtles, and fish	MRV/Contractors	OCAC
Strike or stranding	Birds	MRV/Contractors	OCAC
Risk of collision	Cetaceans, turtles, and fish	MRV/Contractors	OCAC/ECO
Risk of entanglement	Turtles	MRV	OCAC
Underwater noise effects	Cetaceans, turtles, and fish	Contractor	ECO

3 Monitoring Programs

3.1 Marine Fauna Monitoring Program

Limited information is available on the distribution and abundance of marine species in the Coral Field and broader seascape. The objective of the marine fauna monitoring program is to obtain reliable and more site-specific information on the presence or absence of target species (seabird, cetaceans, fishes, and turtles). The collection of data will enable a better understanding of the occurrence and abundance of target species. Together with the establishment of a reference area outside the Project's AoI, the program may enable the assessment of possible changes to species as a result of the presence and potential impacts of the Coral North FLNG, recognising the peripatetic nature of the open ocean marine species subject to natural and anthropogenic influences outside the Project's control.

Monitoring campaigns shall be conducted twice a year to cover both the dry and wet seasons.

3.1.1 Survey Approach – Transect

Marine fauna monitoring will be performed in linear transects travelling perpendicular to the north-south gradient, covering both the control area and the Project areas (ADI and the navigation corridor; Figure 1.1), subject to weather conditions and/or operational constraints. The survey transects should be drawn to ensure adequate coverage. The same number of transects will be undertaken in both the Project and Control with the same length (minimum 5 nm in a straight line), subject to weather conditions and/or operational constraints. The survey should cover a width of 750 meters and should be performed at a minimum of 30 min for each transect to cover the transect line (5 nm). The cut-off point for observing will depend on the survey vessel's stability in rough weather and will also be determined by the operations ongoing at the time.

A vessel with a platform will be used for the marine fauna monitoring program. The observation platform should be sited at a position suitable for optimal observation, typically at the highest point on the vessel with an unrestricted view of the sea surface to observe any fish, turtles, or bow riding dolphins. Ideally, the observation platform shall have the same height as that used in the baseline survey (~5.7 m) or no less than 3 m high. The boat shall travel at an average speed of 10 knots (18 Km/h).

Ideally, the marine fauna monitoring survey team should include four observers, divided into two teams. One team of two marine fauna observers (MFOs) will be positioned on the observation deck, one covering the starboard side and the other the port side of the transect. The MFOs teams will rotate every 90 -120 minutes. The MFOs will observe the first sector either 90° starboard to 10° port or 10° starboard to 90° port out to 300 m as well as the second sector 300 m to the horizon. The area will be scanned with the naked eye and when something of interest is sighted, binoculars (7 × 50 or 8 × 42) will be used.

Marine fauna observed outside the transect area are also important and observations will be recorded as long as they do not interfere with observations in transect. Priority will be given to marine fauna observed within 300 m of the vessel, although all observations will be registered. If possible and conditions permit, photographs will be taken of any marine fauna.

Some seabirds are attracted to the boat or may follow the boat. Care will be taken to not register duplicates. When visibility is poor due to rain or fog and the entire width of the 300 m transect is not visible, surveys will still be conducted, and observers will record the width of the transect that is visible during the survey (e.g., 200 m).

Marine fauna sightings records will include the following information as much as possible:

- Sighting location;
- Species;
- Number of individuals, adults, juveniles, and calves;
- Age;
- Sex;
- Angle and distance from the vessel;
- Behaviour; and
- Direction of travel.

Distance to the vessel will be measured using a rangefinder whenever possible or placed in the following distance classes: (A= 0-50m away from the ship, B = 50-100m, C = 100-200m, D = 200-300m, and E > 300m).

Fixes on the handheld GPS will be taken at every marine fauna sighting and team rotation. Effort will be described for every 10 minutes, including information such as vessel position, water depth, speed of vessel, wind direction, wind force, sea state, swell, visibility, sun glare and precipitation. The survey team will be in contact with the bridge to obtain information such as water depth, vessel speed, etc. Additionally, GPS track will be activated to log vessel's position every minute.

Data will be recorded on forms tailored for the project based on Joint Nature Conservation Committee (JNCC) and European Seabirds at Sea (ESAS) templates (Models C_D_S_P, S_D_E, S_D_S – see Appendix I).

In the event a dedicated marine fauna survey vessel is not available, a supply and/or support vessel shall be used to observe and record marine fauna encountered in the navigator corridor and immediate FLNG area.

3.1.2 Survey Approach – Stationary

Whenever possible, monitoring from the vessel while stationed at the Coral North location will follow a sampling “points” approach, by scanning the sea area viewable from the vessel. Scan sampling entails taking a “point” or “instantaneous” sample of a marine fauna individual 's location or behaviour. A scan time of 15 minutes duration should be used to eliminate the possibility of recording the same

individual and/or group more than once within a scan. Ideally, the minimum scanning period should be 60 minutes (four [4] scans) and a maximum of 180 minutes (12 scans); however, the scanning period will be adapted to the supply vessel timing. Each sampling point will record the bearing, distance, orientation, behaviour, and number of individuals, registering the presence of calves (in the case of cetaceans) as individuals, or as part of a group.

The number of animals recorded at each sampling point will be the number of individuals seen singularly or within a group at a particular compass bearing and distance from the observation platform. The position of individuals and/or groups will be recorded within 5° compass bearings and distance measurements will be taken with a measuring stick, adequate for the height of each point. Orientation will be expressed as a compass bearing, related to the direction of movement of an individual or group of animals, when diving or surfacing.

Monitoring should be undertaken on the side of the vessel that is away from the glare of the sun.

All data will be entered in data sheets predicted in the BMP for monitoring noise effects, one for observation effort and another for sightings (Models C_O_S, C_O_E, S_O_E and S_O_S – Appendix V).

A dedicated survey for the demersal coelacanth (*Latimeria chalumnae*) is not necessary as the more suitable habitat is found to the east of the project and at water depths between 400-1000m (ERM, 2016). However, the presence of this species should be reviewed in the Remotely Operated Vehicle (ROV) data planned for facility inspections during the operational phase. Relative abundance can be estimated by standardizing the number of sightings per unit of effort (SPUE). Video hours is the easiest form of standardization as it encompasses radial and perpendicular transects and irregular paths, assuming ROV velocity is relatively constant. If at all present, ROV surveys performed during the night are more likely to find coelacanth at these depth ranges, since they are usually in much shallower waters (400m) during the day.

3.1.3 Data Analysis and Survey Indicators

The distribution, abundance and density of target group's species gained from the line transect methodology will be used as monitoring indicators for both migratory and resident species.

Abundance and occurrence data can be used to re-evaluate the results of the EIA and CHA findings, to compare the abundance and species distribution among areas and across time, as well as to potentially ascertain effects from the presence and operations of the FLNG and associated vessel traffic, such as attraction or avoidance effects.

The abundance and density of marine fauna species observed in the study area should be calculated using Conventional Distance Sampling (CDS) methods using the Distance 7 software (or Distance R package). If there are insufficient sightings and abundance and density cannot be estimated, a relative abundance indicator such as SPUE (sightings per hour) per square, or presence-absence data should be used.

3.1.4 Reporting

The progress of each survey will be reported in a dedicated Field Survey report to be provided by the Contractor. This report must provide the following minimum information:

- Sampling dates, effort, indication of methods;
- Results, such as the number of observations and species detected, including new species;
- List, status, and responses to an incident and nonconformities; and
- Records of constraints or any accident, if applicable.

A Monitoring Report should be issued after each biannual survey, containing the following minimum information:

- Detailed monitoring data;
- Incidents and adaptive management response;
- Results and discussion of all the analyses described in the methodology; and
- Conclusions and recommendations.

Monitoring Reports should contain an integrated analysis and discussion of data from baseline, past, and current monitoring surveys including those carried out specifically for the Coral South project when applicable. The main findings from each survey will be included in the Project's biannual Environmental and Social (E&S) performance reports.

3.1.5 Incident Notification and Non-conformity Reporting

Notification and reporting related to incidents arising from the monitoring activities, or an incident preventing or deviating from the marine fauna monitoring as planned, should be appropriately recorded, documented, and notified to the OCAC within 12 hours. These incidents should also be recorded on the field survey and monitoring reports. The incident investigation reports and follow up actions must be submitted to Company as soon as they are completed.

If non-conformities from the monitoring program are identified, corrective actions should be implemented as required by the ECO and supervised by the OCAC. The nature of corrective actions is defined case by case depending on the assessment of the issue. After corrective actions have been taken, additional monitoring may be required to verify resolution of the issue(s).

3.1.6 Adaptive Management

If the analysis indicates that a critical habitat criterion has been triggered in addition to what was assessed in the EIA, this should be communicated as promptly as possible to the ECO. Furthermore, the potential for and the significance of impacts on the species should be assessed, with additional mitigation developed and implemented as required.

If the results from the first three (3) years of monitoring indicate that the survey program is not successful, the survey strategy and program should be re-evaluated and adjusted accordingly.

3.2 Bird Interaction Monitoring Program

3.2.1 Survey Approach

Data on bird strikes or stranding is helpful to understand potential impacts of the FLNG facilities on avifauna and to identify ‘areas of concern’, areas of lighting, which result in a disproportionate number of bird strikes. Monitoring of bird strike or stranding will be performed on the FLNG vessel to understand the potential for attraction and subsequent collisions.

Observers will walk around the FLNG facility, recording all interactions between birds and the facilities such as strikes, stranded birds, birds attracted to the vessel, birds that use the vessel or facilities as shelter, birds that have been burnt by the flare. Bird species, type of interaction, weather conditions, and platform characterization will be registered in the form Model S_I_P (Appendix II).

3.2.2 Survey Schedule and Effort

Bird interaction monitoring will be carried out on a daily basis during the “winter period” (June to October) and two days per week in the “summer period” (November to May) in line with the predicted higher abundance of seabirds, particularly migratory, during the winter.

On the monitoring days, the observer will walk around the FLNG platform twice a day (at daytime and night-time).

In addition, FLNG operational staff are encouraged to record any bird sighting and/or interactions such as injured birds on the respective biodiversity forms.

3.2.3 Data Analysis and Survey Indicators

Observations will be integrated into the monitoring surveys database.

The number of events shall be calculated and mapped to enable identification of “areas of concern” where more damage occurs. Data together with previous monitoring results should be analysed to identify critical seasonal periods, possible trends, and long-term variations within the avifauna encounters. Data analysis should be calculated for total numbers and per species with particular emphasis on sensitive species.

Whenever possible, statistical techniques (e.g., Analyses of Variance, Generalised Linear Mixed Models) should be used to compare variation of observations across time (e.g., seasonal variation).

The number of global, and per species, seabird strikes, stranding, and risk behaviour should be used as monitoring indicators.

3.2.4 Reporting

Bird interaction monitoring activities will be reported on the HSE monthly reports and include the following informing:

- Sampling dates, methods, and effort;
- Results, such as the number and type of observations and species detected;
- List, status, and responses to an incident and nonconformities; and
- Records of constraints or any accident, if applicable, for the reporting period.

Additionally, the findings of the monitoring activities will be included in the biannual E&S performance reports, containing the following information:

- Data from the previous monthly reports;
- Incidents and adaptive management response;
- Integrated analysis and discussion of the data, including from previous biannual reports.

3.2.5 Incident Notification and Non-conformity Reporting

Notification and reporting of incidents arising from the monitoring activities, such as the observation of an abnormal number of strikes or of disturbance induced behaviours, or any incident preventing or deviating from the bird interaction monitoring program as planned, should be appropriately recorded, documented, and notified to the OCAC within 12 hours (24 hours if the incident occurred at night). These incidents should be included in the monthly and biannual reports. The incident investigation reports and follow up actions must be submitted to Company as soon as they are completed.

If non-conformities from the monitoring program are identified, corrective actions should be implemented as required by the ECO and supervised by the OCAC. The nature of corrective actions is defined on a case-by-case basis depending on the assessment of specific issues. After corrective actions have been taken, additional monitoring may be required to verify resolution of the issue(s).

3.2.6 Adaptive Management

If the monitoring results indicate that seabird strikes or stranding are frequent, and zones and facilities of impact are identified, the ECO should work together with the operations team to identify and implement mitigation measures without compromising the safety of the FLNG.

If impacts on sensitive species are detected critical habitat criteria and significance of impact should be reassessed with additional mitigation developed and implemented, as required.

3.3 Collision Monitoring Program

3.3.1 Survey Approach

The objective of monitoring the risk of collision is to avoid potential disturbance, injury, and/or mortality to cetaceans, turtles, and large fish.

From the vessel bridge, an observer should watch for animals in danger of collision, notify the vessel master to initiate avoidance measures without endangering the safety of the vessel and personnel, and record any interaction with mega marine fauna. If an interaction occurs the observer should record the following information:

- Species;
- Number of animals present;
- Type of behaviour and direction of travel including any changes as a result of the vessel interaction;
- Environmental, metocean, and weather factors;
- Actions taken to minimize the interaction.

The distance of all observations should be calculated and aggregated in the following distance classes: <50m, 50-100m, 100-300m, 300-500m, >500m.

In case of injury or mortality of cetaceans or turtles the Marine Fauna Mortality- Injury Report should be completed (Model C_I_D – see Appendix III).

All sightings shall be recorded in data sheets (Model C_O_E, C_O_S and C_I_D - - see Appendix III).

3.3.2 Survey Schedule and Effort

Monitoring should be carried out continuously for all vessel traffic activities during the drilling, installation, commissioning, and operations phases.

3.3.3 Data Analysis and Monitoring Indicators

Observations of mega marine fauna, near misses, and collisions should be integrated into the monitoring survey database.

The vessel, number of collisions, sightings within the exclusion zone (500m), and disturbance behaviours should be calculated per square kilometre, and mapped to obtain an impact and risk spatial zone. Evaluation should also be undertaken to determine if there is difference in impacts or risk among vessel types.

Data together with previous monitoring results should be analysed to ascertain seasonal critical periods, possible trends, and long-term variations within the marine megafauna encounters. Data

analysis should be calculated for total figures and per species with particular emphasis on sensitive species.

Whenever possible, statistical techniques (e.g., Analyses of Variance, Generalized Linear Mixed Models) should be used to compare observations across time (e.g., seasonal variation), and among vessels and locations.

The number of collisions and of sightings within and bordering the exclusion zone prior to the observed direction change and behavioural deviation, such as the group splitting, should be used to assess the performance of the mitigation measures.

3.3.4 Reporting

Monitoring of potential collisions with mega marine fauna will be reported on the HSE monthly reports including the following information:

- Date and time of encounters, methods and effort;
- Results, including number, type and species observed;
- List, status, and responses to incidents and nonconformities,
- Records of constraints or any accident if applicable, for the reporting period.

Additionally, the findings of the monitoring activities will be included in the biannual E&S performance reports, containing the following information:

- Data from the previous monthly reports;
- Incidents and adaptive management response;
- Integrated analysis and discussion of the data, including that from previous biannual reports.

3.3.5 Incident Notification and Non-conformity Reporting

Notification and reporting of incidents arising from the monitoring activities, such as an abnormal number of collisions or disturbance induced behaviours, or any incident preventing or deviating from the monitoring program, should be appropriately recorded, documented, and notified to the OCAC within 12 hours. These incidents should also be recorded in the monthly and biannual reports. The incident investigation reports and follow up actions must be submitted to Company as soon as they are completed

If non-conformities from the monitoring program are identified, corrective actions should be implemented as required by the ECO and supervised by the OCAC. The nature of corrective actions is defined on a case-by-case basis depending on the assessment of specific issues. After corrective actions have been taken, additional monitoring may be required to verify resolution of the issue(s).

3.3.6 Adaptive Management

If vessel collision or frequent high-risk situations are identified, the ECO should ensure that a critical assessment of vessel compliance and effectiveness of mitigation measures is undertaken with mitigation measures improved or additional measures included in the Navigation Management Plan.

If impacts on sensitive species are detected, critical habitat criterion and significance of impact should be reassessed with additional measures developed and implemented, as required.

3.4 Entanglement Monitoring Program

3.4.1 Survey Approach

To date, there are few reported cases of marine megafauna becoming entangled in moorings or cables of any kind. Most reported instances of entanglement are associated with rope, nets, mooring lines, etc., forming part of fisheries gear; either directly in use or indirectly from lost, discarded and/or derelict fishing gear. Nevertheless, as good practice to address the potential risk and to gain a better understanding for the potential for entanglement of marine fauna (particularly turtles) with the subsea infrastructure (anchors, flexible risers, flowlines, etc.) periodic monitoring of risers should be undertaken.

The risk of entanglement is likely to be low and therefore dedicated monitoring is not required and should be aligned with other routine subsea inspections.

The surveys should include monitoring of any subsea structures that pose an entanglement risk to marine fauna or to record any materials (e.g., lines and nets) that may pose a risk. The ROV survey should be carried out by competent pilots and an appropriately trained supporting crew. The survey should also be subject to an appropriate risk assessment following guidance developed by the International Marine Contractors Association (IMCA). ROV survey activities should be reported using the form Model E_I_D template (Appendix IV).

3.4.2 Survey Schedule and Effort

Entanglement monitoring should be aligned with the schedule for routine operational subsea inspections. If any entanglement is recorded, dedicated monitoring should be undertaken and potentially on a more frequent basis depending on the severity of the impact.

3.4.3 Data Analysis and Monitoring Indicators

Detected entanglements should be integrated into the monitoring surveys database.

Data together with previous monitoring results should be analysed to identify critical seasonal periods, possible trends, and long-term variations within the marine turtle encounters. All analysis should be calculated for total numbers and species.

Whenever possible, statistical techniques (e.g., Analyses of Variance, Generalized Linear Mixed Models) should be used to compare observations of entanglements across time (e.g., seasonal variation, weather, and/or sea state) and structures where entanglement may occur.

3.4.4 Reporting

Entanglement monitoring activities will be reported on the monthly HSE report, following the routine subsea inspection. The report will provide the following information:

- Survey dates and effort,
- Results, such as the number of entanglements and species,
- List, status, and responses to incidents and nonconformities; and
- Records of constraints or any accident if applicable, for the reporting period. Reporting should be adjusted with changes in survey frequency.

Monitoring outside the routine operational inspection surveys should be reported on the respective monthly HSE report.

Additionally, the findings of the monitoring activities will be included in the biannual E&S performance reports, containing the following information:

- Data from the previous monthly reports;
- Incidents and adaptive management response;
- Integrated analysis and discussion of the data, including that from previous biannual reports.

3.4.5 Incident Notification and Non-conformity Reporting

Notifications and reporting on incidents arising from the monitoring activities, such as the observation of abnormal number of entanglements, or any incident preventing or deviating from the monitoring as planned, should be appropriately recorded, documented, and notified to the OCAC within 12 hours. These incidents should also be recorded in the monthly and biannual reports. The incident investigation reports and follow up actions must be submitted to Company as soon as they are completed.

If non-conformities from the monitoring program are identified, corrective actions should be implemented as required by the ECO and supervised by the OCAC. The nature of corrective actions is defined on a case-by-case basis depending on the assessment of specific issues. After corrective actions have been taken, additional monitoring may be required to verify resolution of the issue(s).

3.4.6 Adaptive Management

As described in Section 3.4.2, the monitoring approach should be adaptive to reflect the number of incidents and potential risks. In addition, if regular entanglement incidents are detected investigation of the root cause should be undertaken and measures taken accordingly to minimise further entanglements.

3.5 Underwater Noise Effects Monitoring Program

3.5.1 Survey Approach – During Berthing Activities

Monitoring of the potential impact of underwater noise on marine megafauna should take place during both berthing and unberthing of Liquefied Natural Gas carriers (LNGCs) and condensate tankers.

During berthing and unberthing of LNGCs and condensate tankers, an observer will be present to monitor the presence of cetaceans and other animals within the pre-defined 300 m exclusion zone (area of direct influence calculated for the most sensitive cetaceans – see Table 1.3):

- Prior to the use of thrusters on the FLNG, carriers, and tankers, the observer will conduct a 'pre-activity' visual search of 30 minutes to determine the presence of any cetacean within a 300-meter exclusion zone.
- A location onboard the FLNG should be designated that enables an unobstructed view of the berthing and unberthing area for marine mammals observations;
- Observations should be performed on the side of the FLNG facing the carrier and/or tanker. The observer will scan the 300-metre exclusion zone using binoculars (10X42 or similar) or spotting scopes (20-60 zoom or equivalent). Concurrently, the FLNG Central Control Room (CCR) shall inform the observer if the long-range security cameras detect any potential marine mammal;
- The number of animals seen individually or within a group, presence of juveniles and/or calves, the position within 5° compass bearings and distance from the FLNG, the animals direction of travel and behaviour will be recorded;
- In case the observer's observation is restricted by the weather conditions (e.g., visibility below 300 meters), or if it becomes unsafe to conduct the monitoring onboard the FLNG, monitoring operations will be conducted using long-range security cameras.;
- If a whale is observed within the exclusion zone during the pre-activity search, the observer will immediately notify the relevant parties involved in the offshore operations and require that the approaching vessel and berthing activities either not be initiated or temporarily cease, if it is operationally safe; until the marine mammal is sighted outside of the 300 meters area or not sighted for at least 15-30 minutes;
- The observer will record the species type (if known), date, time, and location of the observation, and take a photograph of the cetacean if possible;

- During the use of the FLNG thrusters the observer will identify the presence of whales and cetaceans outside the exclusion zone (300 meters) and record any behavioural response to underwater noise.

To record the presence of marine mammals and the potential response to underwater noise, the Record of Operation/Activity (Model C_O_A_E and C_O_A_I – see Appendix V) should be completed.

3.5.2 Survey Approach – Outside of Berthing Activities

During the period with no berthing and unberthing, observations of marine mammals will be noted during the bi-weekly walkaround of the FLNG undertaken for general monitoring of marine fauna. Observations will record the following information, if possible:

- Species;
- Compass bearing within 5 degrees and distance from the FLNG;
- Direction of travel;
- Behaviour; and
- Number of individuals or as a group, number of juveniles and calves.

In addition, FLNG operational staff are encouraged to record any marine mammals and other marine megafauna. Data should be entered in the observation effort datasheet and the sightings datasheet (Models C_O_S, C_O_E, S_O_E and S_O_S - see Appendix V).

3.5.3 Data Analysis and Monitoring Indicators

Fauna observations will be integrated into the monitoring surveys database.

All analysis should be calculated for total numbers and per species, with particular emphasis on sensitive species.

Observation and behavioural results both during and outside berthing activities should be used to evaluate the potential effect of underwater noise from the thruster operations, validate the findings in the underwater noise impact assessment and assess the effectiveness of the 300-meter exclusion zone.

Previous monitoring data should be used to identify possible trends and long-term variations of the marine mammal encounters. Whenever possible, statistical techniques (e.g., Analyses of Variance, Generalized Linear Mixed Models) should be used.

3.5.4 Reporting

Monitoring activities will be reported on the monthly HSE Reports. The report will provide the following information :

- Survey dates, methods, and effort;
- Results, such as the number of observations and species detected;
- List, status, and responses to an incident and nonconformities; and
- Records of constraints or any accident if applicable, for the reporting period.

Additionally, the findings of the monitoring activities will be included in the biannual E&S performance reports, containing the following:

- Data from the previous monthly reports;
- Incidents and adaptive management response; and
- Integrated analysis and discussion of the data, including that of previous biannual reports.

3.5.5 Incident Notification and Non-conformity Reporting

All notification and reporting related to incidents arising from monitoring activities, such as the observation of an abnormal number of disturbances induced behaviours, or any incident preventing the development of monitoring as expected or at all, should be appropriately recorded, documented, and notified to the OCAC within 12 hours. These incidents should also be mentioned in the monthly and biannual reports. The incident investigation reports and follow up actions must be submitted to Company as soon as they are completed.

If non-conformities are detected, corrective actions should be implemented as required by the ECO and supervised by the OCAC. The nature of these corrective actions should be defined case by case, depending on the assessment of specific issues. After corrective actions have been taken, additional monitoring of non-conformities may be required to verify resolution of the issues

3.5.6 Adaptive Management

If monitoring indicates that the current mitigation measures are ineffective, modification and / or new measures including larger exclusion zones should be implemented.

3.6 Evaluation, Auditing and Disclosure

MRV HSE Manager will perform internal evaluations twice a year to verify the effectiveness of the monitoring actions. The evaluation will be based on indicators (e.g., number of campaigns) reported in the monthly HSE reports and the effectiveness of adaptive management response to incidents. The effectiveness of mitigations measures should also be evaluated on a yearly basis through the biannual Environmental Performance Reports or as needed should areas of concern be identified. Based on the findings of the internal evaluation, the individual monitoring programs, frequency and adaptive measures may be modified while ensuring good environmental performance.

The results of the monitoring programs should also be subject to a yearly external audit by a team of marine specialists aligned with the findings of the audit of the MRV Global Management Plan performance. The audit report shall be prepared and presented to responsible and accountable parties for acknowledgment and commitment for the implementation of any identified corrective and/or improvement actions.

Additionally, monitoring progress and results will be communicated to relevant stakeholders, as part of stakeholder engagement, with comments incorporated to improve the monitoring program.

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Appendix I – Marine Fauna Monitoring Program Data Forms

Appendix II – Bird Interaction Monitoring Program Data Forms

Seabirds interaction with stationary platforms

BOAT /Platform	DATE			Sheet N°	Total n° of sheets in the day	Observer name- _____
	DAY	MONTH	YEAR			
						Type of interaction 1.attracted to platform 2. avoid platform 3.strike 4. shelter 5.stranded 6. other (detail)

Hour (UTC)	Position		Seabird characterisation					Weather characterisation				Interaction characterisation			Platform characterisation			Comments (if applicable, please specify if the bird was released and in what conditions)
	Latitude	Longitude	Specie	N° of seabirds	Age ¹	Plumage ²	Sex (M/F)	Wave height (m)	Cloud Cover (%)	Wind direction	Beaufort scale	Seabird State (dead, injury, disorientate, etc.) (Include photo of seabird)	Type of interaction	Occasional encounter (O) or active searching for stranded animals (A)	Platform Activity	Lights On/Off	Type of lights	

¹J(uvenile), I(mature), or A(dult); ²B(breeding), NB(non-breeding), M(moult). If the platform surveyed are other than the one where the observer are (e.g. Observer are positioned at a stopped vessel and are seeing interactions with the FLNG platform, in this situation should be putted on comments: interaction reported to FLNG platform – IR to FLNG).

Appendix III – Collision Monitoring Program Data Forms

Appendix IV – Entanglement Monitoring Program Data Forms

Appendix V – Underwater Noise Effects Monitoring Program Data Forms
