



ENVIRONMENTAL IMPACT ASSESSMENT OF THE CORAL NORTH PROJECT

ENVIRONMENTAL IMPACT STUDY

NON-TECHNICAL SUMMARY (NTS)

Project Proponent:



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1 INTRODUCTION

Mozambique Rovuma Venture (MRV) is proposing to develop a new floating liquefied natural gas (FLNG) plant in Area 4, a hydrocarbon exploration and production block located off Cabo Delgado. The new FLNG, called Coral North, will be anchored offshore, more than 50 km off the coast of the Palma District, and about 10 km north of the FLNG Coral Sul.

In order to obtain the Environmental License for the Project, required by Mozambique Environmental Law (Law no. 20/1997, of October 1), the Proponent must undertake an environmental impact assessment (EIA) process to inform the Government’s decision-making process.

This document is the Non-Technical Summary (NTS) of the Environmental Impact Study (EIS) and presents the main conclusions from the EIA process.

2 ENVIRONMENTAL CONSULTANT

Consultec - Associated Consultants, Lda. was appointed to carry out the EIA process for the Coral North Project. Consultec is a Mozambican company registered as an environmental consultant with the Ministry of Agriculture, Environment and Fisheries (MAAP).

3 EIA APPROACH AND METHODOLOGY

The EIA process for the Coral North Project was carried out in accordance with Mozambique Decree No. 54/2015, which regulates the EIA process, and Decree No. 56/2010, the environmental impact assessment regulation for petroleum operations.

Following the designation by MAAP as Category “A” project requiring the full EIA process, an Environmental Pre-Feasibility and Scope Definition Study (EPDA) was produced. The main objective of the EPDA was to identify the main impacts of the project, present the project to the public for the initial consultation and define Terms of Reference and the studies necessary to support the Environmental Impact Study (EIS).

After a round of public participation process including public consultation meetings, in June 2023, the EPDA was submitted to MAAP and subsequently approved in September 2023. This enabled the EIA process to progress to the third phase - the EIS.

During the EIS, more detailed studies were carried out to establish the environmental and social baseline conditions, identify and assess potential impacts of the Project and to propose mitigation measures to reduce negative impacts and enhance positive impacts. Mitigation measures were

compiled into an Environmental Management Plan (EMP) as clear and practical actions.

The main conclusions of the EIS were presented to the public during a second phase of public participation. To enable this participation, a Draft EIS Report was made available for public comment and review. Public concerns and issues collected during public participation were then documented in the Final EIS Report for submission to MAAP. MAAP approved the EIS and an environmental license was issued in December 2024; thus the project must be developed in compliance with all measures established in the EIS and the EMP.

4 LEGAL FRAMEWORK

As part of the Project EIA process, the requirements of applicable national legislation to the petroleum and environmental sectors, were identified. The EIA was developed in accordance with the EIA regulations (Decree No. 54/2015 and Decree No. 56/2010), as well as with Ministerial Diploma No. 129/2006, which approves the general directive for EISs, and Ministerial Diploma No. 130/2006, which approves the general directive for public consultation.

In addition to national requirements, other relevant international standards and requirements were identified and summarized in the EIS. These included the International Finance Corporation (IFC) performance standards and environmental, health and safety guidelines.

5 PROJECT DESCRIPTION

Project Location

The Coral North Project will be located offshore, more than 50 km off the coast of Palma District, Cabo Delgado Province, and approximately 10km northeast of the Coral South FLNG. The location of the Project is shown in Figure 2.

MAIN COMPONENTS OF THE PROJECT

The purpose of the Project is to extract, process, and export natural gas in liquid form known as LNG. This LNG will be used as a fuel source in other countries. The Coral North Project will be a floating natural gas plant, capable of extracting natural gas from the reservoir, liquefying the gas into LNG and exporting the LNG in tankers. The Project includes the following infrastructure:

- Production wells – six subsea wells for extracting natural gas from the Coral reservoir. Two of these wells may be drilled at a later stage of the project.

- Subsea production system with umbilicals, risers and flowlines – subsea infrastructure needed to supply gas to FLNG.
- FLNG moored at sea, with a production capacity of 3.5 MPTA (million tons per year) of LNG.

These components are illustrated in Figure 1.

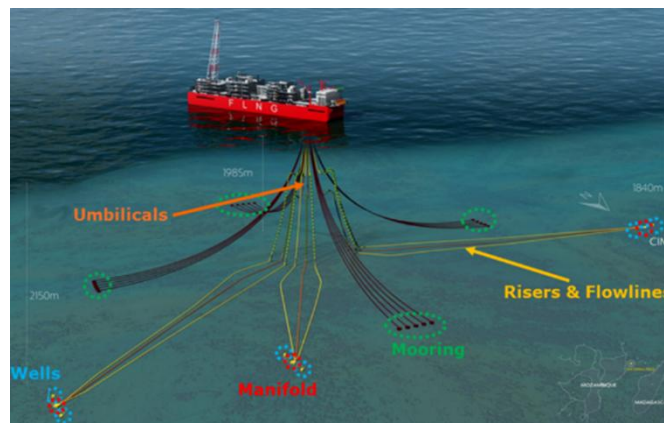


Figure 1: Main project components

In addition to these marine components, the Coral North Project will use Pemba port and airport for support vessels and helicopters as well as a logistics base (warehouses) in Pemba.

PROJECT PHASES

Project implementation will include the following sequential phases:

- Drilling and completion phase: a drillship will be used to drill and complete the subsea production wells.
- Installation phase: the subsea production system, mooring chains and anchors will be installed and the FLNG will be towed to the site and connected to the subsea production system. The FLNG will be built overseas, mainly in an established South Korean shipyard with some modules fabricated in China and Southeast Asia as there is no Mozambican shipyard with the required construction capacity.
- Commissioning and start-up phase: the FLNG and equipment will be tested to confirm that it is ready to start operations.
- Operation and maintenance phase: natural gas will be extracted from the wells, treated, condensed and exported.
- Decommissioning phase: at the end of the 25-year project lifetime, the production system will be decommissioned and the FLNG will be shutdown and towed to the end destination and end-use that will be defined later in the project's life-cycle, closer to the decommissioning phase.

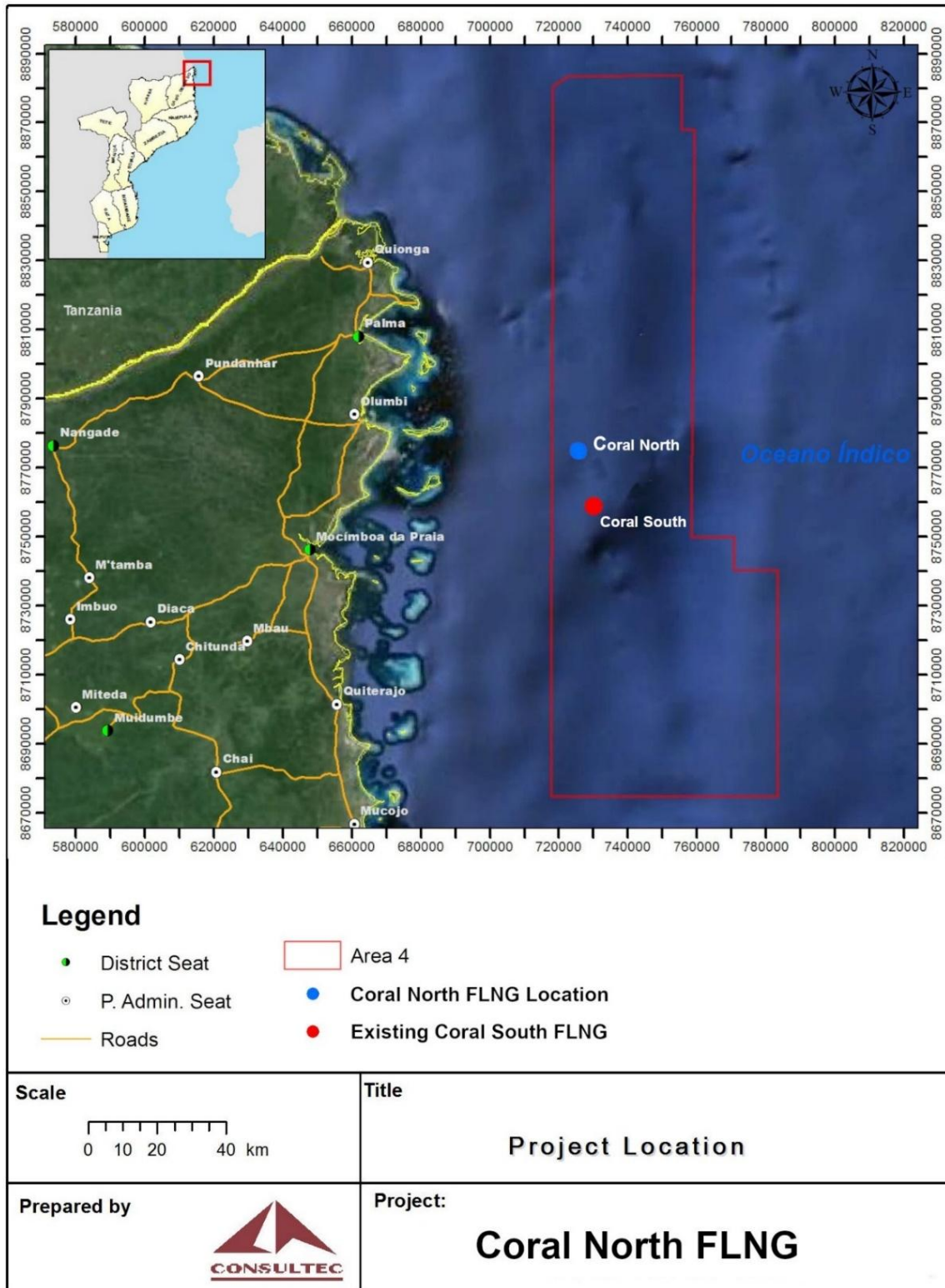


Figure 2 – Location of the Coral North Project

LABOR

In the drilling, installation, commissioning and start-up phases, the workforce will be those primarily working on offshore vessels in the open sea, supported by a small number of workers at the onshore logistics base and offices. Most of the work will be carried out by the crews of highly specialized international ships. As such the number of direct employment opportunities created in Mozambique at this phase will be relatively low.

In the operations phase, employment required for the Coral North FLNG project will be structured in three main centers: offshore, onshore logistics base and office. Personnel working offshore will include all personnel on board the FLNG and maritime services personnel, including the ship's crew. Direct employment to be created by the Project is estimated at 300 to 350 positions.

It is estimated that cumulatively 1,400 Mozambicans will either be directly or indirectly employed including through services required from local companies over the duration of the Project.

PROJECT SCHEDULE

The Project schedule includes the following phases:

- Engineering and licensing: 2024 – 2025
- Drilling and completion of wells – 2026 – 2027
- FLNG construction and on-site installation – 2025 – 2028
- Commissioning and start-up – 2028
- Operations phase – starting in 2028. Once operational, the FLNG will operate for at least 25 years, without the need to come to a port. The installation will be designed to withstand cyclones and storms without requiring disconnection from the mooring site.

6 BIOPHYSICAL AND SOCIOECONOMIC BASELINE

OCEANOGRAPHY

The FLNG will be located in the Mozambique Channel, in the open ocean with water depths about 2,000 m. The dominant currents are to the southwest and can reach 1.3 m/s.

The predominant current is from the northeast from December to February, and from the south and east from

March to November. Wave heights average 1-2 m, very occasionally reaching 3-4 m. The average sea surface temperature varies between 29.8°C in February and 25.2°C in August.

BIODIVERSITY

The marine fauna of the Mozambique Channel includes:

- Thirty-three (33) species of marine mammals, including five species with global conservation status – bowhead whale, Antarctic blue whale, sperm whale, fin whale and Indian Ocean humpback dolphin
- Five (5) species of sea turtles, all with global protection status
- Forty-five (45) species of seabirds, including five with global protection status
- Wide variety of fish species, including sharks and species of commercial interest, such as tuna.

The deepsea habitat is characterised by flat and undulating seabed surface, megaripples, channels and canyon flanks and walls, dominated by abyssal clays, with sparse and scattered benthic communities including xenophyophores (protozoa), sea pens, and other invertebrates (annelids, arthropods, molluscs, and echinoderms).

SOCIOECONOMICS

The proposed project is located off the coast of Palma District (over 50 km offshore) in Cabo Delgado Province. Activities on land will include logistics and port services, with these provided by infrastructure in the city of Pemba.

The Coral North Project will not have interaction with the populations of the Palma District as artisanal fishing is restricted to nearby coastal areas, including coral ecosystems and coastal islands up to a maximum of 15-20 km from the district coastline. Hence these areas will not be affected by the Project activities.

Human activities in the offshore sea waters are maritime navigation of cargo ships and deep-sea commercial fishing.

There is no record of national commercial fishing activities for the Coral North Project area. Commercial fishing with nets and longliners is carried out by foreign fleets licensed in the Mozambique Exclusive Economic Zone, which operate from 12 nautical miles.

7 ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

The main objective of the EIS phase is to more fully assess the potential environmental and social impacts of the Project that were initially identified in the EPDA scoping phase and then to evaluate the importance (significance) of the impact based on a standardized impact assessment methodology, approved in the EPDA.

The EIS Report documents the process undertaken for identifying, assessing, mitigating and managing the biological, physical and socio-economic impacts of the Project.

An impact is any change to a resource or receptor brought about by the presence of the Project component or by the execution of a Project-related activity. The impacts assessed fall into two main categories: environmental and socio-economic. Environmental impacts include both physical impacts of the Project such as changes in air quality and biological impacts such as changes to marine and land-based habitats.

The socio-economic impacts are effects of the Project on people and their livelihoods.

To support the impact assessment, several specialist studies were prepared for the EIS, in accordance with the Terms of Reference developed and approved in the EPDA phase, including:

- **Air Quality and Greenhouse Gas (GHG) Emissions:** focused on assessing the Project's air pollutants and GHG emissions resulting from the consumption of fuel to operate the project vessels and FLNG and from flaring.
- **Lighting and Visual Impacts:** focused on assessing night-time light pollution from the FLNG and project vessels and the potential impact on marine fauna and onshore tourism activities.
- **Noise:** focused on underwater noise emissions from the FLNG and project vessels, and assessing the impacts on marine fauna, particularly on groups sensitive to underwater sound, such as marine mammals.
- **Marine discharges:** focused on assessing the potential impacts of the discharge of wastewaters from drilling, the vessels and FLNG operations on the quality of receiving marine waters. Hydrodynamic modeling of the discharge of produced water, cooling water, FLNG wastewater and drilling cuttings were carried out to support the analysis.
- **Biodiversity and ecosystem services:** the potential impacts from lighting, noise, marine discharges, etc.

may also result in impacts on marine biodiversity. A specialized biodiversity study was prepared to characterize the environment and to assess the potential impacts of project activities.

- **Socioeconomics:** While the Coral North Project is not expected to have significant interactions with the socioeconomic environment due to the offshore location, a study was carried out in order to ensure that the social aspects, including those associated with logistical and ground support activities, were fully understood and addressed in the EIS process.
- **Unplanned events:** In addition to considering impacts that may arise from normal operations, a specialist study was also conducted to assess potential unplanned events (accidents) and the potential direct and indirect impacts. Mathematical modelling was used to simulate the effects of potential accident scenarios, including a diesel spill due to a ship collision, an accidental spill of drilling muds, and a blowout of a production wellhead during drilling.

The specialist studies identified and evaluated 47 negative impacts. Most of these were assessed as being of low or very low significance prior to the application of the proposed mitigating measures, i.e., impacts of reduced importance that can be managed through standard mitigation and good industry practices.

The rest were classified as medium significance before the application of mitigation measures, are briefly described below and detailed in the following table, which includes the mitigation measures proposed to address these impacts:

- **GHG emissions:** The Project's annual GHG emissions were estimated to be slightly less than 1% of national emissions, which was considered a significant contribution (impact of medium significance) to these emissions. These contributions will be minimized by the use of best available technologies and the implementation of equipment maintenance and monitoring programs.
- **Impacts on biodiversity:** Several effects may cause medium significant negative impacts on biodiversity before mitigation is applied, including the potential introduction of alien species due to ship ballast water, the attraction of light from the FLNG and underwater noise emissions during operation, and risks of collision with marine fauna. Several mitigation measures for biodiversity were defined to minimize these impacts to lower levels of significance.

- If a large-scale accidental spill occurs, more significant impacts on water quality, biodiversity and socio-economics, where coastal areas are affected, may arise. The risk of accidental spills will be controlled through the implementation of an Oil Spill Contingency Plan, in accordance with applicable regulations and best practices in the oil industry.

All negative impacts of the project will be effectively minimised by the application of the proposed mitigation measures, and were subsequently reassessed as low or very low significance, with the exception of GHG emissions, which remain as medium significance due to the long duration of the project.

Some significant positive impacts were identified, namely:

- Socioeconomics: Economic stimulation, increased provincial and national revenue, job creation, and transfer of skills to national workers.

The following tables list the identified and assessed impacts that may arise from the Project.

Table 1 – Summary of the impact assessment of the Coral North Project for the drilling, installation and commissioning phases

#	Impact description – construction, drilling, installation and commissioning phases	Significance rating		Nature of impact	Main mitigation/enhancement measures
		Pre-mitigation	Post-mitigation		
Air Quality					
QAR1	Air quality impacts during drilling, installation and commissioning phases	VERY LOW	VERY LOW	(-)	- Implement standard maintenance procedures for project ship engines and generators.
Atmospheric Noise					
RA1	Noise emissions from general earth moving and construction activities	VERY LOW	VERY LOW	(-)	<ul style="list-style-type: none"> - Operate earthmoving equipment within specifications and capacity (e.g., ensure machines are not overloaded). Use noise reduction accessories, such as sound insulation and silencers, whenever possible. - Use intake and exhaust silencers on all internal combustion powered equipment, ensuring that the equipment has good quality silencers installed. - Choose specific access routes for the transport of materials and equipment, in order to avoid passing through inhabited areas as much as possible. - Carry out the noisiest construction operations (including earthmoving and material transportation) only on weekdays, during daylight hours. - Perform regular maintenance on all mechanical equipment, replace worn parts and lubricate as necessary. - Regularly inspect all equipment equipped with combustion engines to check their operating conditions (periodic maintenance) to minimize the increase in acoustic emissions resulting from poor operating conditions. - Inform residents living near the area where construction work is being carried out of construction activities by the contractor and site supervisors.
Water quality					
QAG1	Potential degradation of seawater quality due to discharge of drilling cuttings	VERY LOW	INSIGNIFICANT	(-)	<ul style="list-style-type: none"> - Collect all LTOBM cuttings and sludge onto the vessel and transport them ashore by supply vessels for treatment and disposal at a recognized landfill. - If an unplanned event prevents transfer of drilling wastes to shore, temporarily suspend drilling operations until transfer to shore can be resumed.
Land and seascape					
L1	Impact of the Project on the character of the landscape and/or seascape	VERY LOW	VERY LOW	(-)	- No mitigation is required.

#	Impact description – construction, drilling, installation and commissioning phases	Significance rating		Nature of impact	Main mitigation/enhancement measures
		Pre-mitigation	Post-mitigation		
Biodiversity					
BIO1	Effects of liquid effluents from vessels on marine ecology due to changes in water quality	VERY LOW	INSIGNIFICANT	(-)	<ul style="list-style-type: none"> - Establish separate drainage systems for water contaminated by hydrocarbons (closed drainage) and drainage of general areas (open drainage). - Use drip trays to collect runoff and spillage from equipment not confined to a delimited area, and channel the runoff to the closed drainage system. - Discharge of deck drainage, bilge water and bilge water discharges shall comply with MARPOL 73/78 requirements. - Train crew members on the risks of contamination from deck water discharge and the importance of cleaning up spills as soon as they occur.
BIO2	Effects of solid waste disposal on marine ecology due to changes in water quality	INSIGNIFICANT	INSIGNIFICANT	(-)	<ul style="list-style-type: none"> - Apply appropriate treatment and disposal of solid waste to prevent pollution of sea water. - Apply all solid waste management measures in accordance with national regulations and international standards and best practices. - Treat solid food in accordance with MARPOL regulations (73/78). - Segregate, temporarily store and contain all other solid wastes on the ship for appropriate treatment and/or disposal ashore in accordance with MARPOL Annex V. - Train crew members on waste management procedures.
BIO3	Effects of drilling cuttings discharge on marine ecology due to changes in water quality	VERY LOW	VERY LOW	(-)	<ul style="list-style-type: none"> - Use only low toxicity WBM for drilling the initial sections of the well. - Use sludge recovery systems for LTOBM. - Monitor and record the use of all drilling fluid components and other chemicals. - Manage and discharge WBM in accordance with international best practices.
BIO4	Effects of drilling mud and cuttings discharge on deep-water benthic macrofauna due to suffocation and burial effects.	LOW	VERY LOW	(-)	<ul style="list-style-type: none"> - Perform ROV surveys at drilling sites prior to drilling commencing. Adjust the exact drilling location as much as possible to avoid impacts to any identified sensitive benthic communities or habitats. Harder substrates will be avoided. - Use only low toxicity WBM for drilling the initial sections of the well. - Use sludge recovery systems for LTOBM. - Monitor and record the use of all drilling fluid components and other chemicals. - Manage and discharge WBM in accordance with international best practices.
BIO5	Effects of noise on marine fauna during drilling, installation, commissioning and decommissioning phases	VERY LOW	VERY LOW	(-)	<ul style="list-style-type: none"> - Implement standard vessel and drillship maintenance practices. - Implement a marine mammal observations (MMO) procedure during drilling activities. - Avoid sensitive marine areas and receptors during vessel transit (e.g. maintain a 300 m exclusion zone from any marine mammals encountered during transit).

#	Impact description – construction, drilling, installation and commissioning phases	Significance rating		Nature of impact	Main mitigation/enhancement measures
		Pre-mitigation	Post-mitigation		
BIO6	Effects related to artificial lighting on marine fauna during drilling, installation, commissioning and decommissioning phases	LOW	VERY LOW	(-)	<ul style="list-style-type: none"> - Keep light emissions as low as possible, in accordance with best environmental management practices. - Minimize non-essential lighting on vessels and protect and/or reduce, whenever possible, the number of lights that shine directly onto the water. - Consider using amber wavelengths. - Monitor bird strikes and strandings as part of the project's adaptive management plan in order to identify areas of lighting impact and define actions to avoid and/or reduce the impact. - Keep disoriented or unharmed seabirds found on vessels at night in dark containers and release them during the day. All ringed and/or tagged birds found on vessels should be reported to the appropriate ringing/tagging system. - Prohibit all crew members from killing or injuring seabirds and establish effective measures to punish crew members who deliberately kill or injure seabirds.
BIO7	Risk of collisions and entanglement with marine fauna	VERY LOW	INSIGNIFICANT	(-)	<ul style="list-style-type: none"> - Ensure that all vessels maintain constant surveillance on the bridge to spot cetaceans in danger of collision. - Keep disoriented or unharmed seabirds found on vessels at night in dark containers and release them during the day. All ringed and/or tagged birds found on vessels should be reported to the appropriate ringing/tagging system. - Prohibit all crew members from killing or injuring seabirds and establish effective measures to punish crew members who deliberately kill or injure seabirds.
BIO8	Effects of ballast water on the marine environment during drilling, installation, commissioning and decommissioning	LOW	VERY LOW	(-)	<ul style="list-style-type: none"> - Comply with international and national legislation for the uptake and discharge of ballast water. International best practices must be followed (see IPIECA, 2010).

Table 2 – Summary of the impact assessment of the Coral North Project for the start-up and operation phases

#	Impact Description – Startup and Operation Phases	Significance rating		Nature of impact	Main mitigation/enhancement measures
		Pre-mitigation	Post-mitigation		
Air Quality					
QAR2	Air quality impacts during the start-up phase	VERY LOW	VERY LOW	(-)	- Implement standard combustion equipment maintenance procedures to maintain projected emissions.
QAR3	Impact on air quality during the operational phase.	LOW	LOW	(-)	- Implement standard combustion equipment maintenance procedures to maintain projected emissions. - Monitor the Project's emissions and ambient air quality on an annual basis. If monitoring campaigns detect higher than expected emissions or relevant impacts on ambient air quality, investigate the cause(s) for such impacts and implement relevant mitigation measures to eliminate these causes (to be defined on a case-by-case basis, depending on the causes identified), as part of an adaptive management process.
QAR5	Air quality impacts resulting from cumulative emissions from FLNG Coral Sul and Coral North	LOW	LOW	(-)	- Implement standard combustion equipment maintenance procedures to maintain projected emissions. - Monitor the Project's emissions and ambient air quality on an annual basis. If monitoring campaigns detect higher than expected emissions or relevant impacts on ambient air quality, the causes for such impacts will be investigated and relevant mitigation measures will be implemented to eliminate these causes (to be defined on a case-by-case basis, depending on the causes identified), as part of an adaptive management process.
Greenhouse Gases and Climate Change					
GEE1	Project GHG emissions	MEDIUM	MEDIUM	(-)	- Implement best available technologies. - Implement preventive maintenance routines to avoid performance degradation. - Install waste heat recovery units. - Maintain zero flaring policy during normal operations. - Carry out preventative maintenance and operational efficiency to reduce flaring. - Develop and implement a GHG management plan to monitor and assess GHG emissions from the FLNG operation including accounting for methane emissions. Report Project's GHG emissions to environmental authorities on a semi-annual basis. - Design facility to minimize fugitive emissions. - Design facilities to ensure energy-efficient production. - Implement leak detection and repair (LDAR) program.

#	Impact Description – Startup and Operation Phases	Significance rating		Nature of impact	Main mitigation/enhancement measures
		Pre-mitigation	Post-mitigation		
GEE2	Climate change risk to the FLNG through increases in air and seawater temperature, rainfall and storm frequency and intensity	VERY LOW	INSIGNIFICANT	(-)	<ul style="list-style-type: none"> - Design and manufacture equipment and facility for a range of temperatures, set cooling water intake from 150m below sea surface moderated by a large moving water body, infrastructure drainage prevents water accumulation - Design to withstand winds associated with a 10,00-year return period cyclone event
Atmospheric Noise					
RA2	Increased noise levels due to the operation of the logistics base	VERY LOW	VERY LOW	(-)	<ul style="list-style-type: none"> - Ensure that preventive and regular maintenance is carried out on all noise-emitting equipment operating in the warehouse. - Provide workers with ear protectors if they are near loud noise-generating equipment. - Keep a complaint log and track noise events.
Water quality					
QAG2	Potential increase in seawater temperature due to FLNG cooling water discharge	LOW	LOW	(-)	<ul style="list-style-type: none"> - Maintain the correct functioning of the refrigeration system, to maintain the designed discharge temperatures. - Ensure that cooling water is not pumped through the system when it is not needed. - Continuously monitor discharge temperature. - Monitor on a biannual basis the receiving seawater temperature to ensure compliance with the standard at the mixing zone threshold.
QAG3	Potential degradation of seawater quality due to discharge of water produced during the operation phase	LOW	LOW	(-)	<ul style="list-style-type: none"> - Maintain the correct functioning of the treatment system, to maintain the designed discharge concentrations. - Periodically monitor produced water effluent to verify compliance with emission limits. - Monitor on a biannual basis the quality of receiving seawater, to verify compliance with environmental quality standards.
QAG4	Potential degradation of seawater quality due to discharge of other FLNG effluents during the operation phase	LOW	LOW	(-)	<ul style="list-style-type: none"> - Monitor total nitrogen concentrations in the effluent and adjust operations if the monitoring program detects adverse effects. - Monitor total nitrogen in the receiving environment, 300 m from the outfall, to validate the results of the dispersion modeling and ensure compliance with environmental quality standards.
Landscape					
L2	Project impact on visual amenity	VERY LOW	VERY LOW	(-)	<ul style="list-style-type: none"> - Restrict FLNG lighting restricted to the minimum necessary for protection and safety. - Wherever possible, use directional lighting to limit light spill (i.e., the spread of light beyond where it is needed into adjacent areas).

#	Impact Description – Startup and Operation Phases	Significance rating		Nature of impact	Main mitigation/enhancement measures
		Pre-mitigation	Post-mitigation		
L3	Cumulative impact on the landscape character and visual amenity of FLNG Coral Sul and Coral North	VERY LOW	VERY LOW	(-)	<ul style="list-style-type: none"> - FLNG lighting will be restricted to the minimum necessary for protection and safety. - Wherever possible, directional lighting will be used to limit light spill (i.e., the spread of light beyond where it is needed into adjacent areas).
Biodiversity					
BIO9	Effects of deck drainage, bilge water and sewage discharge on marine ecology due to changes in water quality	LOW	VERY LOW	(-)	<ul style="list-style-type: none"> - Establish separate drainage systems for water contaminated with hydrocarbons (closed drainage) and uncontaminated water (open drainage). - Discharge of deck drainage, bilge water and domestic wastewater must comply with MARPOL 73/78 requirements. - Use collection trays to collect drainage and spills from equipment not contained in delimited areas and channel the drainage to the closed drainage system. - Train crew members on the risks of contamination from deck water discharge and the importance of cleaning up spills as soon as they occur.
BIO10	Effects of solid waste disposal on marine ecology due to changes in water quality	LOW	VERY LOW	(-)	<ul style="list-style-type: none"> - Apply appropriate treatment and disposal of solid waste to prevent pollution of sea water. - Apply all solid waste management measures in accordance with national regulations and international standards and best practices. - Treat solid food waste in accordance with MARPOL regulations (73/78). Food waste shall be ground to diameters of less than 25 mm and discharged into the sea. - Segregate, temporarily store and contain all other solid wastes generated on the ship for appropriate treatment and/or disposal ashore in accordance with MARPOL Annex V. - Train crew members on waste management procedures.
BIO11	Effects of noise on marine fauna during the operational phase	LOW	LOW	(-)	<ul style="list-style-type: none"> - In accordance with standard operating practice, activate thrusters when required, at the minimum power required and for the shortest duration required, in accordance with operational needs. - Maintain all FLNG equipment and thrusters throughout the operational phase. - Implement an MMO protocol during docking and undocking operations.
BIO12	Effects of cumulative noise on marine fauna due to simultaneous operations of FLNG Coral Sul and Coral North	LOW	LOW	(-)	<ul style="list-style-type: none"> - In accordance with standard operating practice, activate thrusters when required, at the minimum power required and for the shortest duration required, in accordance with operational needs. - Maintain all FLNG equipment and thrusters throughout the operational phase. - Implement an MMO protocol during berthing and unberthing operations.

#	Impact Description – Startup and Operation Phases	Significance rating		Nature of impact	Main mitigation/enhancement measures
		Pre-mitigation	Post-mitigation		
BIO13	Effects of artificial lighting during the operational phase	MEDIUM	LOW	(-)	<ul style="list-style-type: none"> - Reduce impacts on seabirds and coastal birds by: <ul style="list-style-type: none"> o Implement a bird strike and stranding monitoring plan to identify sensitive species and impact areas – lighting areas that result in a disproportionate number of bird strikes. o Assess and implement, if feasible, adaptive management actions, if areas of impact are identified.
BIO14	Risk of collision and entanglement of marine fauna	MEDIUM	LOW	(-)	<ul style="list-style-type: none"> - Provide constant surveillance on the bridge of all vessels to spot cetaceans in danger of collision. - Record any sightings of marine mammals. - Vessels must not knowingly approach within 300 m of whales or 50 m of dolphins. - If whales are observed within 300 to 100 m of a vessel while underway, vessels shall maintain or reduce speed and change course away from the whales if safe to do so. - If whales are observed <100 m from the vessel, the vessel will reduce power and change course to move away from the whales if operationally safe to do so. - Periodically check risers and lines to detect entanglements of marine fauna, especially turtles. If entanglement occurrences are detected frequently, prepare more detailed studies in order to design additional mitigation measures.
BIO15	Effects of ballast water on marine biodiversity during the operational phase	MEDIUM	LOW	(-)	<ul style="list-style-type: none"> - All vessels containing ballast water must have a specific Ballast Water Management Plan. - Exchange ballast water in deep water (at least 200 m) and as far from land as possible. - Carry out the discharge and loading of ballast water in accordance with national regulations and international best practices.
BIO16	Effects of cooling water discharges on marine ecology	LOW	LOW	(-)	<ul style="list-style-type: none"> - Maintain the correct functioning of the refrigeration system, to maintain the designed discharge temperatures. - Ensure that cooling water is not pumped through the system when it is not needed. - Continuously monitor discharge temperature. - Monitor on a bi-annual basis the receiving seawater temperature to ensure compliance with the mixing zone threshold standard.

#	Impact Description – Startup and Operation Phases	Significance rating		Nature of impact	Main mitigation/enhancement measures
		Pre-mitigation	Post-mitigation		
BIO17	Effects of produced water discharges on marine ecology, due to potential degradation of seawater quality	LOW	LOW	(-)	<ul style="list-style-type: none"> - Maintain the correct functioning of the treatment system, to maintain the designed discharge concentrations. - Periodically monitor produced water effluent to verify compliance with emission limits. - Monitor on a biannual basis the quality of receiving seawater, to verify compliance with environmental quality standards.
BIO18	Bird mortality associated with flaring	MEDIUM	LOW	(-)	<ul style="list-style-type: none"> - Install the flue in accordance with the design and construction regulations/PFEER. - Maintain a zero-flaring policy, subject to operational restrictions and without compromising the safe requirements of the facility, operations and workers. - Prepare and implement a monitoring plan for potential bird mortality.
BIO19	Potential disturbance to benthic habitats due to scouring caused by riser movements	LOW	LOW	(-)	<ul style="list-style-type: none"> - Place underwater infrastructure in areas of low sensitivity and biodiversity. - Use ROV to monitor flowline placement. If sensitive hard substrate habitats are identified, implement micro-routing to avoid these habitats.
Socioeconomics					
SE1	Stimulating business tourism.	LOW	LOW	(+)	<ul style="list-style-type: none"> - No mitigation is required.
SE2	Stimulating the local and regional economy	MEDIUM	MEDIUM	(+)	<ul style="list-style-type: none"> - Give priority to local and regional markets, whenever possible, when purchasing and acquiring goods and services. - Involve local small and medium-sized enterprises in capacity building and training in order to increase their capacity to offer quality services and thus take advantage of the business opportunities created by the Project.
SE3	Provincial and national growth and development due to increased state revenue	VERY HIGH	VERY HIGH	(+)	<ul style="list-style-type: none"> - No enhancement measures are applicable.
SE4	Job creation	MEDIUM	MEDIUM	(+)	<ul style="list-style-type: none"> - Establish a recruitment policy and plan with a long-term vision for the gradual transfer of skills.
SE5	Transfer of technical and professional skills to national workers.	MEDIUM	MEDIUM	(+)	<ul style="list-style-type: none"> - Provide technical training programs for workers to improve their professional performance and diversify their skills. - Provide environmental, health and safety training to all workers.
SE6	Raising community expectations	MEDIUM	LOW	(-)	<ul style="list-style-type: none"> - Update the stakeholder engagement and communication plan. - Develop and implement a complaints mechanism. - Provide guidance to contractors on communication and recruitment procedures.

#	Impact Description – Startup and Operation Phases	Significance rating		Nature of impact	Main mitigation/enhancement measures
		Pre-mitigation	Post-mitigation		
SE7	Security of infrastructure, assets, workforce and communities	MEDIUM	VERY LOW	(-)	<ul style="list-style-type: none"> - Hire armed security providers in a transparent manner. - Ensure strict adherence of the armed security services to MRV and ERB's approach to human rights and security, including ERB's code of ethics, Eni's Policy "Respect for Human Rights at Eni", Eni's code of conduct for suppliers and ERB's strategies and actions to minimize risks arising from security forces. - Ensure accountability processes, including a grievance mechanism, are in place to ensure redress in cases of abuse. - Actively engage and ensure that relevant Project information is fed into the national and provincial Voluntary Principles working groups led by the partnership between the Centre for Democracy and Development (CDD) and the Geneva Centre for Security Sector Governance (DCAF).
SE8(i)	Human rights risks – related to employment	LOW	VERY LOW	(-)	<ul style="list-style-type: none"> - Ensure the development and implementation of specific internal appeal mechanisms for Eni staff. - Ensure that adequate due diligence assessments are carried out for all contracted third parties. - Consider ad hoc or regular training on labour rights – "know your rights" for local Eni staff and third-party staff.
SE8 (ii)	Human rights risks – sexual harassment, abuse and exploitation and gender-based violence (SEAH/GBV)	MEDIUM	LOW	(-)	<ul style="list-style-type: none"> - Ensure the development and implementation of specific internal appeal mechanisms for MRV staff. - Ensure that context-specific SEAH/GBV identification measures are designed and implemented. - Ensure that all service providers and contractors are sensitized and adhere to the ERB approach to GBV/SEAH and abuse and exploitation of other groups in vulnerable communities. - Consider raising awareness and training of locally relevant community on GBV/SEAH and other forms of abuse and exploitation. - Ensure that the "zero tolerance" policy for GBV/SEAH is applicable to third parties and that disqualification and/or appropriate criminal charges and/or disciplinary processes occur. - Ensure that there are adequate support and referral systems for victims. - Consider the possibility of ad hoc or regular training on VBG/SEAH or capacity building for MRV and third-party staff.

#	Impact Description – Startup and Operation Phases	Significance rating		Nature of impact	Main mitigation/enhancement measures
		Pre-mitigation	Post-mitigation		
SE8(i)	Human rights risks – human trafficking	LOW	VERY LOW	(-)	<ul style="list-style-type: none"> - Ensure that all service providers and contractors are informed of and adhere to Eni's Code of Conduct. - Consider locally relevant community awareness and education on human trafficking (link to GBV/SEAH and other forms of abuse and exploitation). - Ensure that the 'zero tolerance' policy on involvement in human trafficking is applicable to third parties and that disqualification and/or appropriate criminal and/or disciplinary proceedings are initiated. - Consider ad hoc training or capacity building on human trafficking in the context of MRV and third party personnel
SE9	Restrictions on access to commercial fishing areas.	LOW	VERY LOW	(-)	<ul style="list-style-type: none"> - Include any complaints filed by fishing operators regarding FLNG operations in the Grievance Mechanism and include this specific category in the stakeholder management plan. - As part of the implementation of the stakeholder management plan, communicate with fishing operators in collaboration with ADNAP, DPAPCD and IDEPA.
SE 10	Potential changes in the public health profile of Pemba due to the presence of Project workers	VERY LOW	VERY LOW	(-)	<ul style="list-style-type: none"> - No mitigation is required, other than continuing to apply MRV's existing health policies for its workers.
Maritime Traffic					
TM1	Risk of marine vessel collisions due to increased maritime traffic	LOW	LOW	(-)	<ul style="list-style-type: none"> - Implement all standard navigation safety measures and procedures (as listed above). - Strict application of ColReg. - Notify maritime department, local authority and port authority about the company's logistics and supply chain activities. - Establish a 500 m safety zone around the FLNG facility boundary.

Table 3 – Summary of the impact assessment of the Coral North Project for unplanned events (accidental scenarios)

#	Impact Description – Unplanned Events	Significance rating		Nature of impact	Main mitigation/enhancement measures
		Pre-mitigation	Post-mitigation		
Air Quality					
AQ4	Air quality impact due to emergency/unplanned flaring	VERY LOW	VERY LOW	(-)	- Implement standard combustion equipment maintenance procedures to maintain projected emissions.
Water quality					
WQ5	Risk of seawater quality degradation resulting from accidental diesel spills due to vessel collision (unplanned event)	MEDIUM	VERY LOW	(-)	<ul style="list-style-type: none"> - Adopt preventive measures in vessel operations in accordance with national legislation and international best practices. - Develop and implement a comprehensive Oil Spill Contingency Plan (OSCP). - Train personnel to respond effectively in the event of a hydrocarbon spill. - Enforce all policies and procedures. Provide Tier 1 hydrocarbon spill response equipment on support vessels and/or onshore. - Ensure preparedness of the response team and emergency response partners when an unplanned event occurs.
WQ6	Risk of degradation of seawater quality resulting from an accidental release of gas condensate (unplanned event)	MEDIUM	VERY LOW	(-)	<ul style="list-style-type: none"> - Install blowout preventers (BOP) in wellheads. - Develop and implement a comprehensive Oil Spill Contingency Plan (OSCP). - Train personnel to respond effectively in the event of a hydrocarbon spill. - Enforce all policies and procedures. Provide Tier 1 hydrocarbon spill response equipment on support vessels and/or onshore. - Ensure preparedness of the response team and emergency response partners when an unplanned event occurs.
WQ7	Risk of seawater quality degradation resulting from an LTOBM spill due to an accidental disconnection of a lift (unplanned event)	MEDIUM	VERY LOW	(-)	<ul style="list-style-type: none"> - Review well drilling plans by experts to ensure operational readiness. - Develop and implement a comprehensive OSCP. - Train personnel to respond effectively in the event of a hydrocarbon spill. - Enforce all policies and procedures. Provide Tier 1 hydrocarbon spill response equipment on support vessels and/or onshore. - Ensure preparedness of the response team and emergency response partners when an unplanned event occurs.

#	Impact Description – Unplanned Events	Significance rating		Nature of impact	Main mitigation/enhancement measures
		Pre-mitigation	Post-mitigation		
Biodiversity					
BIO20	Effects on marine fauna and coastal habitats resulting from an accidental diesel spill due to a vessel collision (unplanned event)	MEDIUM	VERY LOW	(-)	<ul style="list-style-type: none"> - Develop and implement a comprehensive OSCP. - Train personnel to respond effectively in the event of a hydrocarbon spill. - Enforce all policies and procedures. Provide Tier 1 hydrocarbon spill response equipment on support vessels, onshore. - Ensure preparedness of the response team and emergency response partners when an unplanned event occurs.
BIO21	Effects on marine fauna and coastal habitats resulting from an accidental release of gas condensate (unplanned event)	MEDIUM	VERY LOW	(-)	<ul style="list-style-type: none"> - Develop and implement a comprehensive OSCP. - Train personnel to respond effectively in the event of a hydrocarbon spill. - Enforce all policies and procedures. Provide Tier 1 hydrocarbon spill response equipment on support vessels and/or onshore. - Ensure preparedness of the response team and emergency response partners when an unplanned event occurs.
BIO22	Effects on marine fauna and coastal habitats resulting from an LTOBM spill due to an accidental disconnection of a lift (unplanned event)	MEDIUM	VERY LOW	(-)	<ul style="list-style-type: none"> - Develop and implement a comprehensive OSCP. - Train personnel to respond effectively in the event of a hydrocarbon spill. - Enforce all policies and procedures. Provide Tier 1 hydrocarbon spill response equipment on support vessels and/or onshore. - Ensure preparedness of the response team and emergency response partners when an unplanned event occurs.
Socioeconomics					
SE11	Impact of accidental oil spills resulting from unplanned events on fisheries and coastal communities	MEDIUM	VERY LOW	(-)	<ul style="list-style-type: none"> - Develop and implement a comprehensive OSCP. - Train personnel to respond effectively in the event of a hydrocarbon spill. - Enforce all policies and procedures. Provide Tier 1 oil spill response equipment on support vessels and/or onshore. - Ensure preparedness of the response team and emergency response partners when an unplanned event occurs. - If a spill occurs and reaches the coastal zone, assess the socio-economic and health impacts on the local community and define appropriate actions to restore affected livelihoods to pre-impact levels. - If a spill occurs that reaches the islands or the coastal area, with relevant impacts on tourism activities, the level of economic impact on tourism operators will be assessed and compensation plans implemented to respond to this impact.

In addition, potential environmental and social risks and impacts associated with the Coral North Project primary supply chain have been considered and are presented in the following table. The primary supply chain includes the Engineering Procurement Construction, Installation and Commissioning (EPCIC) Contractor and their Subcontractors who are directly responsible for constructing all of the FLNG components (mooring system, topsides and hull) in shipyards located in Korea, China and Southeast Asia as well as activities in Mozambique.

#	Risk/Impact Description – Supply Chain	Significance rating		Nature of impact	Main mitigation/enhancement measures
		Pre-mitigation	Post-mitigation		
General					
SC-G	Contractor and subcontractor non-compliance with environmental, social and governance requirements and related mandates	VERY LOW	VERY LOW	(-)	<ul style="list-style-type: none"> - Contracting same, known and vetted consortium used for the Coral South EPCIC contract. - Contractual HSE, sustainability, social and workforce requirements specified in the EPCI Contract and other associated Contracts for Coral North. - Declaration of conformity with Operator anticorruption regulations and HSE standards - Supervision and enforcement of Contract obligations through Operator Supply Chain Management Plan including dedicated HSE and sustainability organizational structures, onsite control, monitoring of key performance indicators, corporate audits and reporting.

#	Risk/Impact Description – Supply Chain	Significance rating		Nature of impact	Main mitigation/enhancement measures
		Pre-mitigation	Post-mitigation		
Environmental risks-and impacts					
SC-E	Risk of producing harmful environmental elements such as air and water pollutants, waste, noise and vibration etc. during construction related activities	VERY LOW	VERY LOW	(-)	<ul style="list-style-type: none"> - Require EPCI Contractor and subcontractors (shipyards) to have International Organization for Standardization (ISO) 14001 certified Environmental Management Systems. - Identify and verify compliance with respective host country regulations including valid permits, licenses and consents for emissions and discharges, as required. - Require documented environmental management procedures with defined roles and responsibilities, training and inspection regimes, measuring, monitoring and reporting. - Require, verify, inspect and audit: <ul style="list-style-type: none"> o Hazardous substance and oil leaks and spill prevention facility and response procedures. o Hazardous material management procedures. o Wastewater treatment facilities and water quality controls and monitoring. o Air pollution control facilities and air quality controls and monitoring. o Waste management plan covering segregation, storage, transportation, treatment (incinerators), disposal, records and reporting. o Environmental incident reporting and investigation. o Subcontractor management plans.
Occupational health and safety					

#	Risk/Impact Description – Supply Chain	Significance rating		Nature of impact	Main mitigation/enhancement measures
		Pre-mitigation	Post-mitigation		
SC-OHS	Injury or harm to construction workforce	LOW	VERY LOW	(-)	<ul style="list-style-type: none"> - Require EPCI Contractor and subcontractors (shipyards) to have ISO 45001 certified Occupational Health and Safety (OH&S) Management Systems. - Develop and implement Project HSE Plan as well as Contractor and subcontractors HSE Plans and procedures aligned with Operator HSE requirements. - Require and verify EPCI Contractor and subcontractors emergency response plans. - Compliance with Operator Environmental and Social Supply Chain Management Plan - Develop and implement onsite controls including Operator, Contractor and subcontractor HSE organization, Project HSE steering committee and leadership team, management regular site walkthroughs, supervisor engagement, toolbox talks and risk assessments, safety checklist, training and competency, audit and inspections, incident management, key performance indicators, reporting. - Require and verify health risk assessments, worker medical fitness examinations, onsite health and medical facilities. - Require and verify whistleblowing mechanism
Socioeconomics					
SC-S	Human rights risks – labour related such as the use of child and/or forced labour, discrimination, unsafe working conditions, limited access to collective bargaining, etc.	VERY LOW	VERY LOW	(-)	<ul style="list-style-type: none"> - Require compliance with host country regulations on child and forced labour. - Set, implement and verify Operator, Contractor and subcontractor ethics, human rights and labour policies, commitments, procedures. - Stipulate all suppliers including small and medium enterprises subject to Operator General Conditions relevant articles on human rights. - High human rights criticality commodity requires evidence of the payment (salaries, wages, etc.) and compliance under applicable law. - Assess annually vendors with high and medium human rights criticality. - Carry out Operator human rights assessment of supply chain; implement any recommendations that may arise. - Develop and implement Project HSE Plan as well as Contractor and subcontractors HSE Plans and procedures aligned with Operator HSE requirements. - Require and verify whistleblowing mechanism.

PUBLIC CONSULTATION

In accordance with Mozambican legislation and international best practices, a public participation process (PPP) was undertaken during the development of the EIA. The PPP included two rounds: early in the EPDA phase and the second for the EIS. These rounds included advertising, disclosing preliminary reports to stakeholders and the public for review and comment, conducting open consultation meetings and addressing questions and concerns raised in the meetings as well as those received through other channels.

The EPDA PPP was held in June and July 2023 with public consultation meetings conducted in Pemba and Maputo.

For the EIS phase, the second round of public meetings was held in these same locations, in April and May 2024. The meetings were publicized through advertisements in the newspaper ("*Noticias*") and on the radio (*Rádio Moçambique*). In addition, individual invitation letters were sent to Interested and Affected Parties (I&APs). Following the public meetings, a two-week period was provided for the I&APs to send additional comments.

All comments received during the EPDA and EIS PPP were compiled into the public consultation report provided in Volume V of the Final EIS Report.

8 ENVIRONMENTAL MANAGEMENT PLAN

The EIS report includes an Environmental Management Plan (EMP), which summarizes and structures all environmental and social management, mitigation and monitoring requirements defined in the EIS. The EMP also provides guidance for the development of additional topic specific management plans such as GHG, biodiversity, wastewater, etc. plans that are necessary to minimize Project impacts and to monitor effectiveness of the mitigation measures.

The EMP will be integrated into the MRV Environmental and Social Management System (ESMS), to ensure that the EMP requirements will be fully applied and managed in compliance with Mozambique legislation as well as Company and international standards. Through contractual arrangements and monitoring during all phases of the Project MRV will ensure that its Contractors comply with the requirements of the EMP.

9 CONCLUSIONS AND RECOMMENDATIONS

The main objective of the EIS process is to identify and assess the significance of the potential environmental and social impacts of the Project and to develop corresponding mitigation measures to avoid and/or reduce these impacts.

Forty-seven negative and seven position impacts were identified and assessed in the Coral North EIS. Most of the negative impacts were evaluated as low or very low significance and will be managed through standard mitigation and good industry practices.

A few negative impacts were classified with medium significance prior to mitigation. Measures were then defined to avoid or minimize these impacts to residual levels.

Significant positive impacts associated with increased economic activity, public revenues during operations, job creation, and transfer of skills to national workers were also identified.

The project's mitigation measures have been compiled into an EMP, which MRV and its Contractors must adopt, implement and monitor to ensure that impacts are managed and minimized.

Considering the above, and implementation of the proposed mitigation, the Coral North Project is considered environmentally viable.