

## **DETAILED PROJECT SUMMARY – T-Oil Project**

**Screening:** The Project has been reviewed against OPIC’s categorical prohibitions and determined to be categorically eligible. Major port projects are screened as Category A because of the potential for significant impacts on marine resources.

**Applicable Standards:** OPIC’s environmental and social due diligence indicates that the Project will have impacts that must be managed in a manner consistent with the following of the International Finance Corporation’s (IFC) 2012 Performance Standards (PS):

- PS 1: Assessment and Management of Environmental and Social Risks and Impacts;
- PS 2: Labor and Working Conditions;
- PS 3: Resource Efficiency and Pollution Prevention;
- PS 4: Community Health, Safety and Security;
- PS 5: Land Acquisition and Involuntary Resettlement; and
- PS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

The OPIC-supported Project is located on an offshore terminal, and therefore no land acquisition was required. However, the potential exists for limited economic displacement of local fishermen due to the expansion of an existing permanent fishing exclusion zone to include the newly dredged areas of the Project’s marine access channel, and the establishment of a temporary fishing exclusion zone during dredging to accommodate the marine disposal of dredged materials. The Project is not expected to have adverse impacts on Indigenous Peoples or cultural heritage. Therefore, PS 7 and PS 8 are not triggered by the Project at this time.

In addition to the above standards, the Project will also be required to comply with:

- The IFC’s Environmental, Health, and Safety (EHS) General Guidelines (April 30, 2007);
- The IFC’s EHS Guidelines for Ports, Harbors, and Terminals (April 30, 2007);
- The IFC’s EHS Guidelines for Offshore Oil and Gas Development (June 5, 2015); and
- The IFC’s EHS Guidelines for Crude Oil and Petroleum Product Terminals (April 30, 2007).

In the worst case scenario, the Project is expected to emit up to 200,000 tons of CO<sub>2</sub> per year from vapor combustion during ship-to-ship operations. Additionally, as a result of fuel use during dredging activities, the Project is expected to emit at a rate of up to 150,000 tons of CO<sub>2</sub> per year (but only for the duration of dredging activities). Therefore, the maximum Project-related emissions is expected to be less than 350,000 tons of CO<sub>2</sub> per year.

**Environmental and Social Risks and Mitigation:** Environmental and social issues of concern for this project include the need for a robust Environmental and Social Management System, characterization and disposal of dredged material, air emissions, hazardous materials and oil management, occupational health and safety, emergency preparedness and response, and impacts on marine biodiversity. The potential also exists for limited economic displacement of local fishermen.

### *Environmental and Social Management System (ESMS)*

The Sponsor has a robust ESMS that includes a Sustainability Policy, procedures to identify risks and impacts, management programs to address those risks (including emergency preparedness/response, and monitoring/review), a Social Communication Program to manage stakeholder engagement, and dedicated personnel to implement the ESMS. The Sponsor also has

an adequate community grievance mechanism that allows the general public to submit grievances regarding the Project's environmental and social performance.

#### Characterization and Disposal of Dredged Material

Pollutant levels in the material to be dredged were below international intervention values for sediment. However, several samples exceeded the lower limit for arsenic under Brazilian regulations. Ecotoxicology studies of the samples with elevated arsenic levels indicated no adverse effects on aquatic organisms. Additionally, previous studies have indicated that arsenic levels in the marine sediment in the Project area are naturally elevated.

The deepening dredging will cover an area of 7,341,398 m<sup>2</sup> and generate approximately 37,507,600 m<sup>3</sup> of dredged material which will be disposed of at a 3.6 km x 14.6 km marine disposal area approximately 25 km from the T-Oil Terminal. The Sponsor is currently conducting a sedimentation study to determine the frequency and volumes required for maintenance dredging.

During both deepening and maintenance dredging activities, the Sponsor will implement a Water Quality Monitoring Program to monitor the impacts from dredging and disposal activities.

#### Air Emissions

It is not expected that regular STS operations will have adverse impacts on the surrounding air quality. However, the Project will construct a Vapor Combustion Unit (VCU) to burn excess volatile gasses produced during the STS transshipment process. Not all STS activities will utilize the VCU; tankers may also store volatiles onboard and use them as fuel.

Before the VCU becomes operational, the Sponsor will develop updated risk analyses and emissions modelling and request an amendment of the Project's Operating License to include the VCU system.

#### Hazardous Materials and Oil Management

All Project-related hazardous waste will be collected in adequate containers and disposed of (or recycled) through commercial contracts with registered hazardous waste management companies which will dispose of it in the appropriate legal manner.

The Project will utilize the Açu Port Complex's vessel traffic service (VTS) system, a marine traffic monitoring system that uses radar, closed-circuit television, radio, and an automatic identification system to keep track of vessel movements and provide navigational safety in the vicinity of the Açu Port. The VTS system provides information such as vessel location, speed, size, load-draughts, cargo types and vessel flags. The Açu Port is the first VTS-licensed port in Brazil. Harbor Captains will pilot all Project vessels as they approach and berth at the Terminal.

The Project has standard procedures for the line-up and arrival planning of vessels, approach, berthing, transfer operations, vapor balance, and unberthing.

#### Occupational Health and Safety

The Sponsor provided a healthy and safe working environment for its employees during the construction phase of the Project by complying with applicable Brazilian Law, which establishes mandatory procedures related to OHS in the construction industry.

The Ship-To-Ship ("STS") phase of the Project requires specific OHS safeguards pertaining to the movement of workers between berthed vessels. Project workers involved in the transfer activities must go through a safety briefing, be technically and physically able, have been properly trained, and have agreed to the transfer method being used. The Sponsor can suspend STS activities if any non-conformances with safety regulations are identified.

During dredging activities, the selected contractor will be required to comply with the Brazilian regulation for Health and Safety in Waterway Work, which includes requirements to establish an Onboard Occupational Health and Safety Group, an Internal Commission for Accident Prevention, and an Occupational Health Medical Control Program, in addition to guidelines for on-board alimentation, hygiene, comfort, sanitary installations, and vessel cleaning and maintenance.

#### Emergency Preparedness and Response

The Sponsor commissioned oil spill modeling that was used to inform the Project's Emergency Response Plan for responding to oil spills, which outlines the roles and responsibilities of the emergency response organization, procedures for controlling and responding to oil spills, resources available for response actions, and periodic training.

The Sponsor also prepared an Emergency Control Plan, which lists coordinated actions to be followed in case of fire or explosion, leakage of hazardous products, man overboard, adverse weather conditions affecting the safety of port operations, pollution or environmental accident, or rescue efforts.

The Project has adequate fire safety systems, including both seawater and foam fire suppression systems, an audible alarm system, and procedures to evacuate and/or shut down the STS operations in case of an emergency.

#### Impacts on Marine Biodiversity

Several IUCN threatened or endangered species were identified as either present at the Project area, or potentially present, including two critically endangered species, *Epinephelus itajara* (Atlantic Goliath Grouper) and *Eretmochelys imbricate* (Hawksbill Sea Turtle). The Project is not expected to have significant adverse impacts to the Atlantic Goliath Grouper, as according to the IUCN, the major threat to this species is overfishing. Major threats to the Hawksbill Sea Turtle are associated with disturbance of nests and entanglement in fishing nets.

As part of the Açu Port Complex's original Operational License, the Sponsor initiated a Marine Turtle Monitoring Program in 2011, which involves daily monitoring of the surrounding 62 km of coastline and recording any occurrences involving marine turtles. Turtle nests are geo-referenced, marked, staked/screened (to prevent disturbance), and numbered. Additionally, the Sponsor has set up a sea turtle recovery and rehabilitation center. Reports on the program activities are periodically submitted to the environmental authorities.

During dredging, the Sponsor will also implement a Cetacean Monitoring Program (whales, dolphins, and porpoises). Additionally, dredging vessels will be responsible for monitoring the surrounding sea to ensure no cetaceans (or sea turtles) are nearby. If any of these animals are spotted, the dredging activities will cease until the animals leave the area.

### *Economic Displacement of Fishermen*

The potential exists for limited economic displacement of local fishermen due to the expansion of an existing permanent fishing exclusion zone (associated with the existing T1 marine access channel) and the establishment of a temporary exclusion zone associated with the marine disposal area for dredged materials. However, the new exclusion zone areas do not have any special significance for fishing. Therefore, it is unlikely that the new exclusion zones will result in significant reduction in the area available for the local fishermen.

Additionally, the Sponsor has maintained an investment program to support the local fishing industry and to improve the infrastructure of the local fishing colonies. The Sponsor also maintains an open dialogue with the local fishermen via a Social Communication Program.