ESIA Non-Technical Summary

Tra Vinh Wind Power

PROJECT

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01.
Introduction

For several years, Vietnam has been one of the fastest growing economies in the world emerging as one of Asia's manufacturing hubs. The demand for electricity in Vietnam continues to grow rapidly, but the existing energy sources are limited. For example, supply of fuel is increasingly being supplied from outside Vietnam, hydro-electric energy sources are mostly at maximum capacity and coal-fired sources are emitting high levels of carbon dioxide (CO_2) and other pollutants into the air.

Clean renewable energy generated by the Tra Vinh Wind Power Project in Tra Vinh Province, Vietnam will be transmitted to the Vietnamese grid.

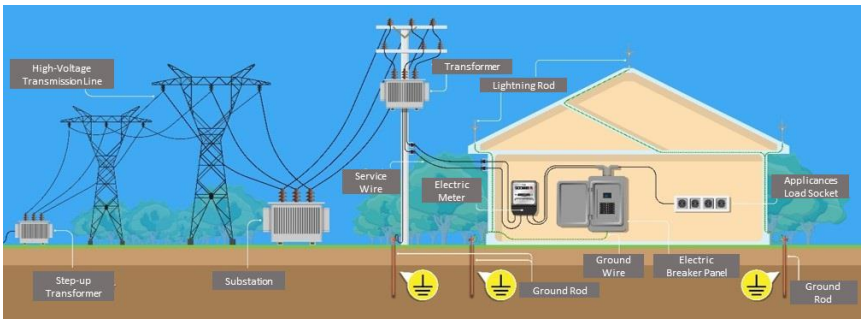
The Project Owner (Tra Vinh Wind Power Company Limited No.1) has received Government approval in the following decisions:

- The location for Tra Vinh Wind Power Project was approved in Decision No. 13309/QD-BCT dated December 4, 2015 by the Ministry of Industry and Trade.
- The approval of the Vietnamese regulatory Environmental Impact Assessment (EIA) was received under the Decision No. 977/QD- UBND of People's Committee of Tra Vinh Province dated May 24, 2019.

This Non-technical Summary (NTS) presents the key findings of the Environmental and Social Impact Assessment (ESIA) that provides a mechanism for the community and stakeholders to understand the Project and its potential impacts. It also provides a mechanism for you to give feedback and expression concerns relating to the Project.

Basic process for generating electricity for the community

Nearshore Wind Turbine Generators



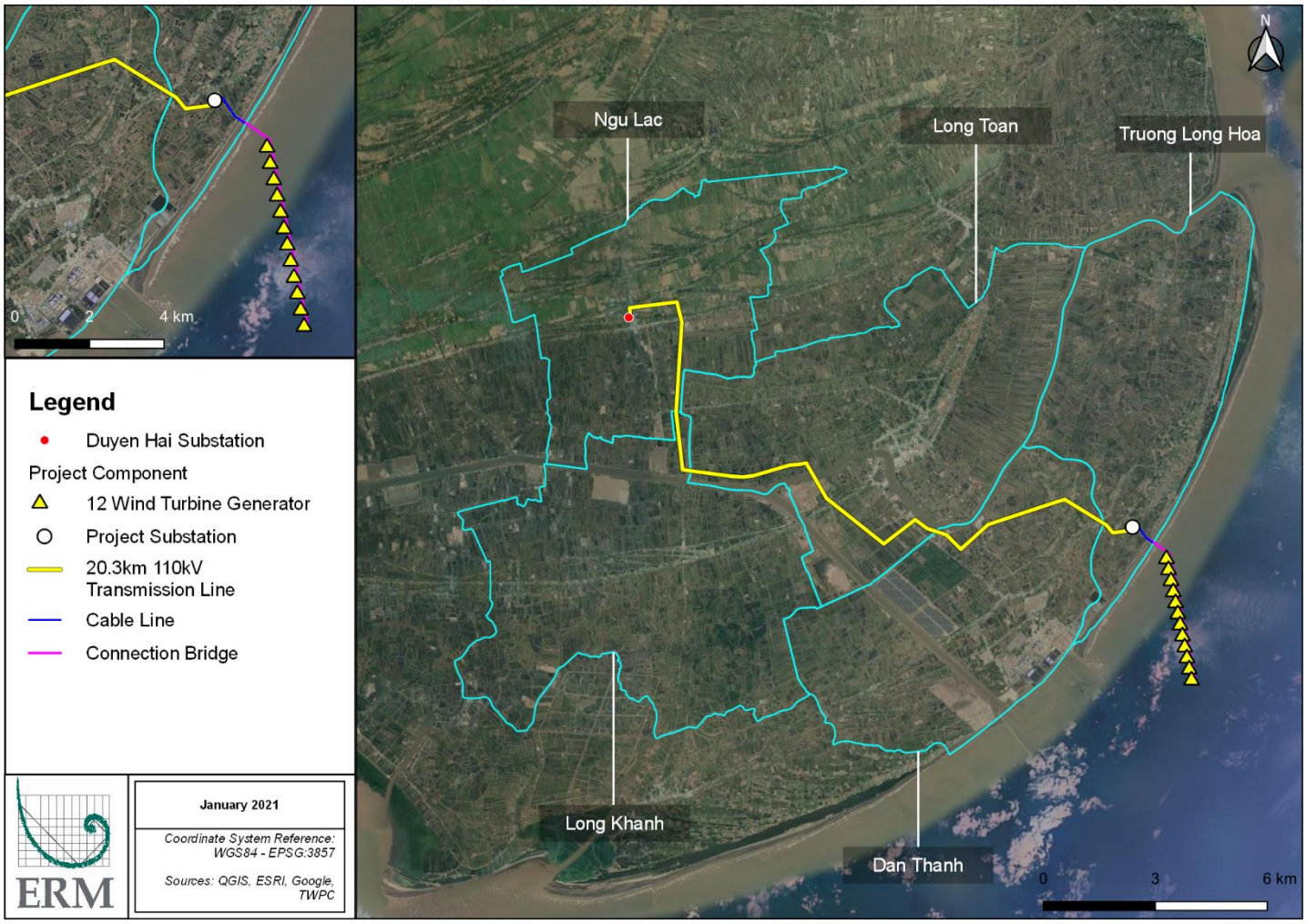
Onshore Substation and Transmission Line

WHAT IS INCLUDED IN NON-TECHNICAL SUMMARY?

The following summary provides a description of the Project, outlines the timeline and associated facilities (transmission line and substation where the project will connect). It describes the existing condition of the environmental, social and health aspects and the expected Area of Influence (AoI), which defines the spatial extent of the Project activities. The summary will outline the assessment approach including the list of relevant local and international standards this ESIA intends to comply with and summarises the key findings of the impact assessment.

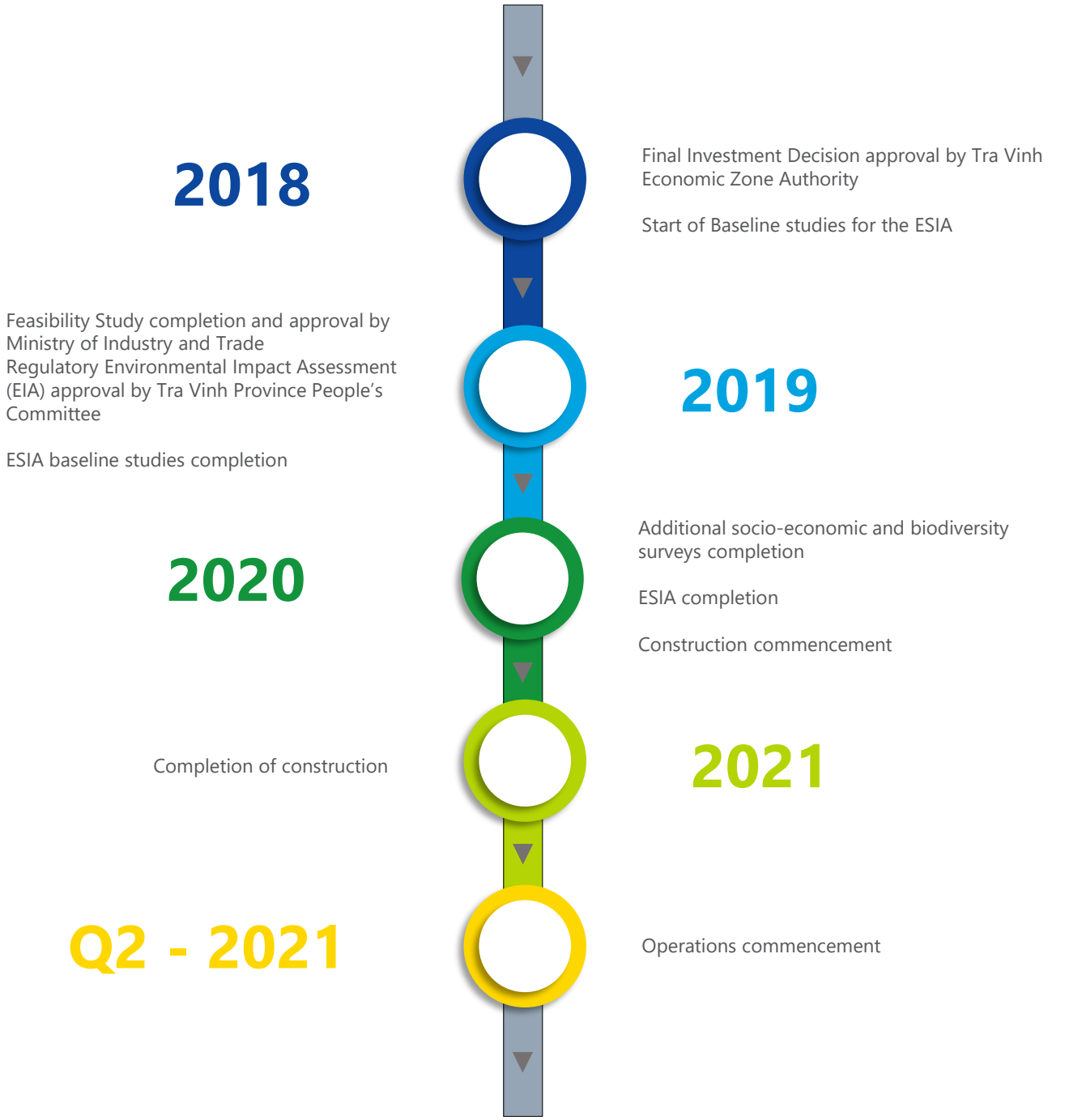
02.
The Project

Tra Vinh Wind Power Project (the "Project") with a capacity of 48MW is located in the coastal area in Duyen Hai Town, Tra Vinh Province. The Project comprises 12 offshore wind turbines, substation inland and a 20.3 km of transmission line across Truong Long Hoa, Dan Thanh and Long Toan (Duyen Hai Town) and Long Khanh and Ngu Lac (Duyen Hai District).



Project Timeline

The timing of the design and construction phase for the Project and associated facilities is expected to commence in 2020 (15 months). The lifes-pan of the Project will be 25 years.

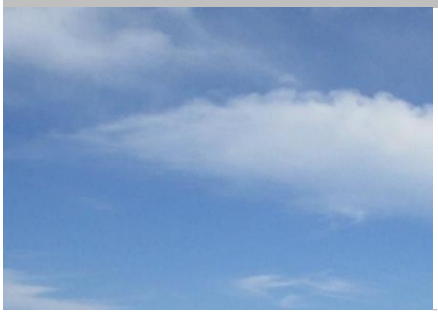


03.

Baseline Information

Onshore Environmental Factors

AIR QUALITY



The results of the baseline monitoring taken offshore and onshore showed that the concentration of air pollutants was undetectable and thus met the national regulation. Therefore, the ambient air quality in the Project area was considered unpolluted.

NOISE

The ambient noise levels were mostly observed to be high in the night time, exceeding IFC guideline levels for residential settings. These exceedances were due to ocean waves, intermittent traffic noise, daily activities of local residents. The sound of insects also influenced the noise levels recorded at all three locations during the night time. Meanwhile, the daytime noise levels were largely below the international standards set by the International Finance Corporation (IFC).

Environmental Factors

SURFACE WATER

Tra Vinh Province includes the two largest river systems of Co Chien and Hau Rivers. The area has a complex river system which plays a vital role in agriculture, aquaculture, irrigation and transportation within the province. One surface water sample was taken in the area of transformer station and administrative office. The results show that all parameters measured met the Vietnamese water quality standards. However, the coliform count was 10.7 and 8.0 times higher than the National Regulation, indicating that the surface water here is highly affected by farming activities and household waste.

SOIL

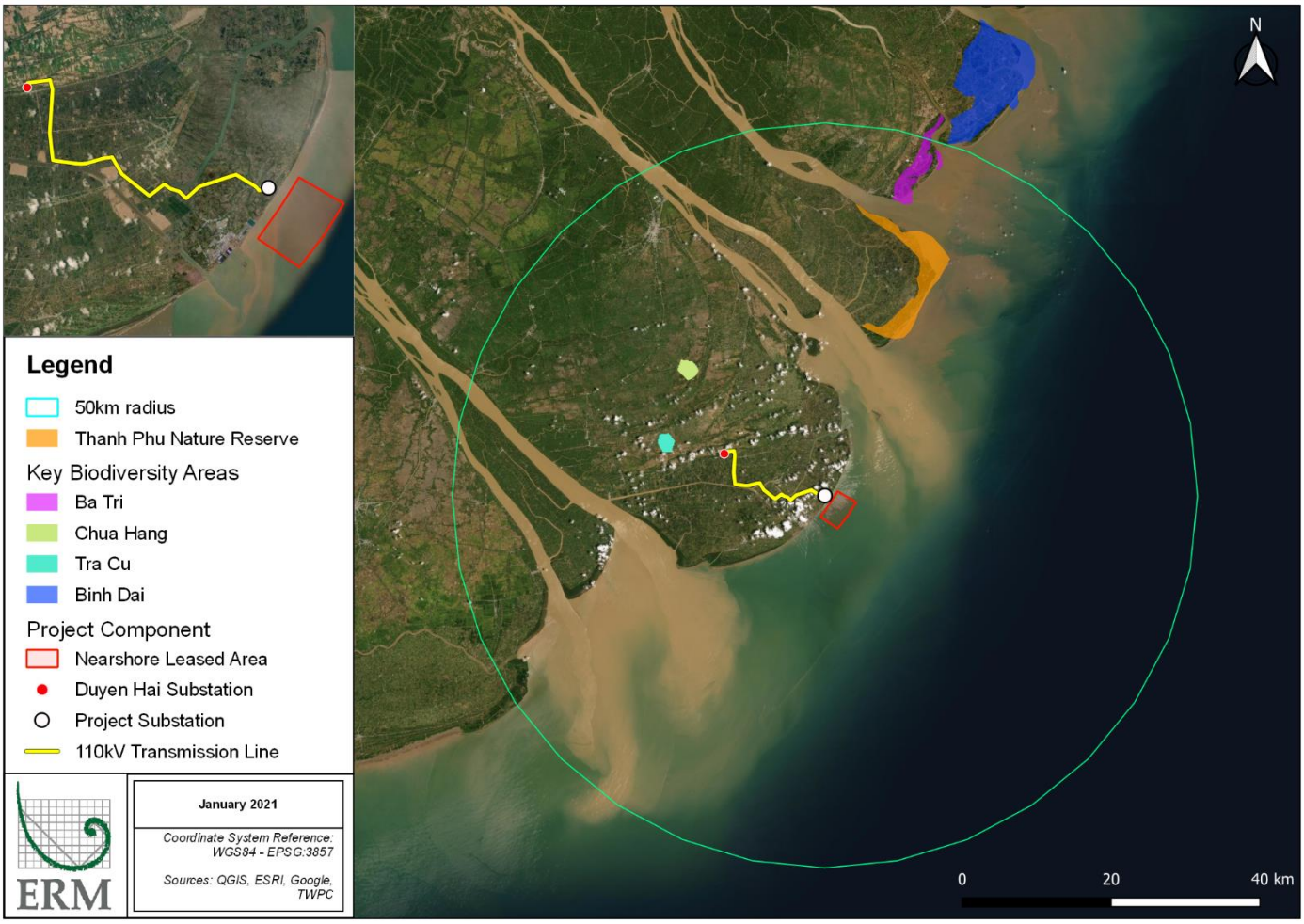
There are four soil samples were taken near the electrical substation and controlling system. The results indicated that there are traces of heavy metals, however they were within the relevant Vietnamese standard (QCVN 03-MT: 2015/ BTNMT).

GROUNDWATER

Two sample was taken from the household's well and were analysed for various parameters. The results showed that most of parameters measured were within permitted levels of the relevant Vietnamese standard (QCVN 09-MT: 2015/BTNMT), except for: coliform, permanganate (MnO_4), nitrite, lead and E.coli. Based on the results, the water from the wells is not suitable for drinking without further treatment.

Biodiversity Baseline

Within a 50km radius from the Project, there are four Key Biodiversity Areas which are Important Bird Areas (IBA) namely Ba Tri, Binh Dai, Chua Hang and Tra Cu. These IBA are globally important for the conservation of birds and another biodiversity. Among these, Ba Tri IBA which is approximately 40km from the Project recorded the presence of Spoon-billed Sandpiper whilst Nordmann's Greenshank was found in Binh Dai IBA (about 48km from the Project). Additionally, the Thanh Phu Nature Reserve is considered an important area for mangrove species diversity.



Biodiversity Baseline

TERRESTRIAL BIODIVERSITY

Terrestrial areas are located in modified habitat, which is dominated by aquaculture areas. Additionally, there are some areas comprising agricultural, aquaculture and urbanization areas land are modified habitat. The mangrove community near the Project area was limited and not likely to support significant bird and bat populations.

MARINE BIODIVERSITY

The key findings of the marine surveys were that the diversity and abundance of benthos was low and that marine mammals and turtles were not recorded in the nearshore waters, however interviews with local people suggest that they are infrequently seen.

BIRDS AND BATS

Source: Ebird

The baseline surveys identified the presence of 66 bird species and 6 bat species within the Project area. However, none of these are Critically Endangered species in the International Union for Conservation of Nature Red List and Vietnam Red Data Book (2007), however, one Endangered migratory bird species was present (refer below).

An Ecologically Appropriate Area for Analysis (EAAA) of the Project is considered to trigger Critical Habitat supporting two migratory bird species. These two species were found in Mekong Delta according to secondary data but not in the Project area. Since these species are migratory, it is possible that they may utilise the Project area as roosting and foraging sites.

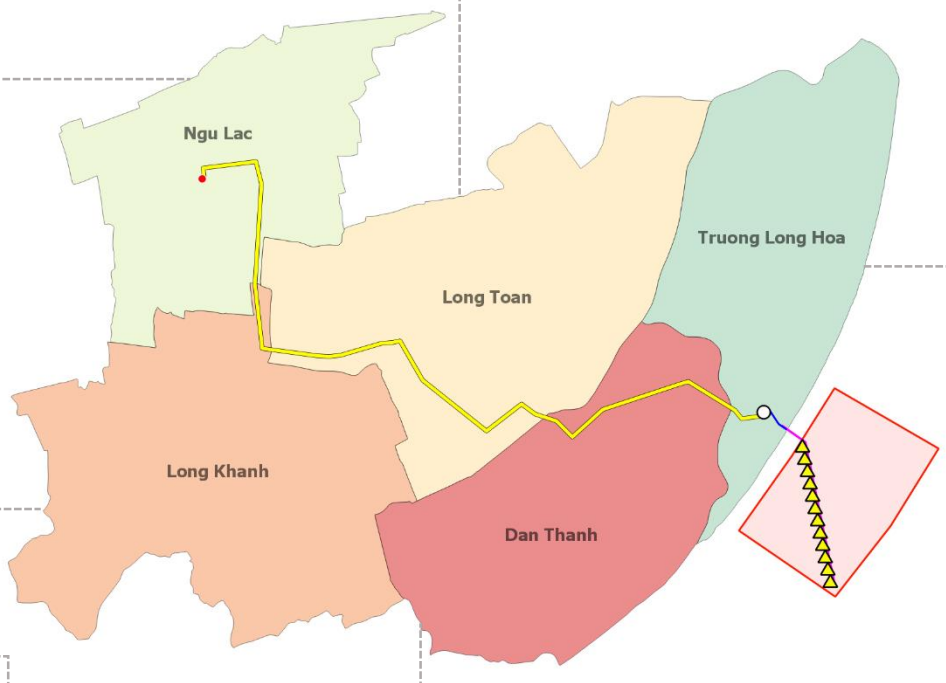
Socio-economic Aspects

Land will need to be acquired from 287 households along the transmission line alignment and safety corridor and there is no physical displacement associated with the Project. Since 2019, the land acquisition process is being led by the Government on behalf of the Project. Land acquisition process will be completed prior to construction. The Project has been conducting stakeholder engagement and household surveys since 2019.

Households: 1,366
Population: 6,133
Ethnic groups: Kinh, Khmer

Households: 1,951
Population: 5,560
Ethnic groups: Kinh, Khmer

Households: 4,118
Population: 18,640
Ethnic groups: Kinh, Khmer

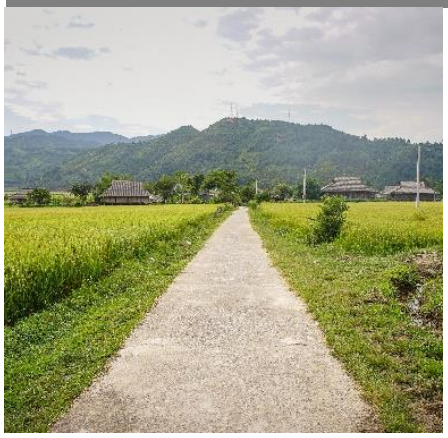


Households: 1,948
Population: 6,560
Ethnic groups: Kinh, Khmer

Households: 1,365
Population: 4,936
Ethnic groups: Kinh, Khmer

Infrastructure and Services

ROADS SYSTEM



Main types of transportation in Duyen Hai District Town are by land road and waterway transports. ERM's socio-economic survey conducted in 2018 and 2020 noted that most of the roads in the surveyed communes are in good condition and convenient for transportation. Most of roads in Truong Long Hoa commune were asphalted, while Road No. 81 and National Road in Dan Thanh and Long Toan commune were upgraded. Ngu Lac Commune upgraded Road No.2 from Duyen Hai Town to Me Lang hamlet to serve ship channeling and the future industrial zone. The road system in Long Khanh Commune is reported to be in moderate condition with the capacity to meet approximately 60% of local demand.

ELECTRICITY

At the end of 2017, Duyen Hai Town PC reported that 99.6% of households of the Town had access to national electricity grid in 2016. In the Duyen Hai District, about 97% of households have access to the national electricity grid. At the end of 2017: Truong Long Hoa and Long Toan commune had all households using electricity from the national grid while Dan Thanh and Ngu Lac commune have around 99% of total households have access to the national electricity grid.

CLEAN WATER

There are two water supply stations serving household consumption within the Duyen Hai Town while underground water is the main source of water for domestic consumption and agriculture production for residents in Duyen Hai district. As of April 2018, around 50% of households in Dan Thanh and Ngu Lac commune used tap water when that proportion in Long Toan commune and Truong Long Hoa commune were 74% and 100%, respectively. Up until June 2020, about 65 % of households in the Long Khanh commune had access to tap water; however, the commune people still relied on borehole water.

Infrastructure and Services

WATER TREATMENT

The common method of wastewater treatment used in the Tra Vinh Province is ozone gas. Currently, agricultural wastewater in Tra Vinh is discharged directly to the environment leading to potential contamination of surface water. During the social survey, it could be observed that only households living along the main roads have access to a communal drainage system. Mostly, wastewaters from both domestic and farm production activities are released to streams, rivers or the sea.

CULTURAL HERITAGE AND SPIRITUAL SITES

- Truong Long Hoa Commune contains seven places of religious worship and also home to the Con Tau national relic and the Con Trung Temple, a provincial-level relic built in the early years of the Minh Mang Emperor more than 150 years ago;
- Dan Thanh commune contains a whale tomb of Lang Ong (Lăng Ông in Vietnamese) at the Con Ong Hamlet;
- Long Khanh commune contains the Khanh Hung Temple which is recognized as a provincial cultural heritage site;
- Ngu Lac Commune contains four pagodas.

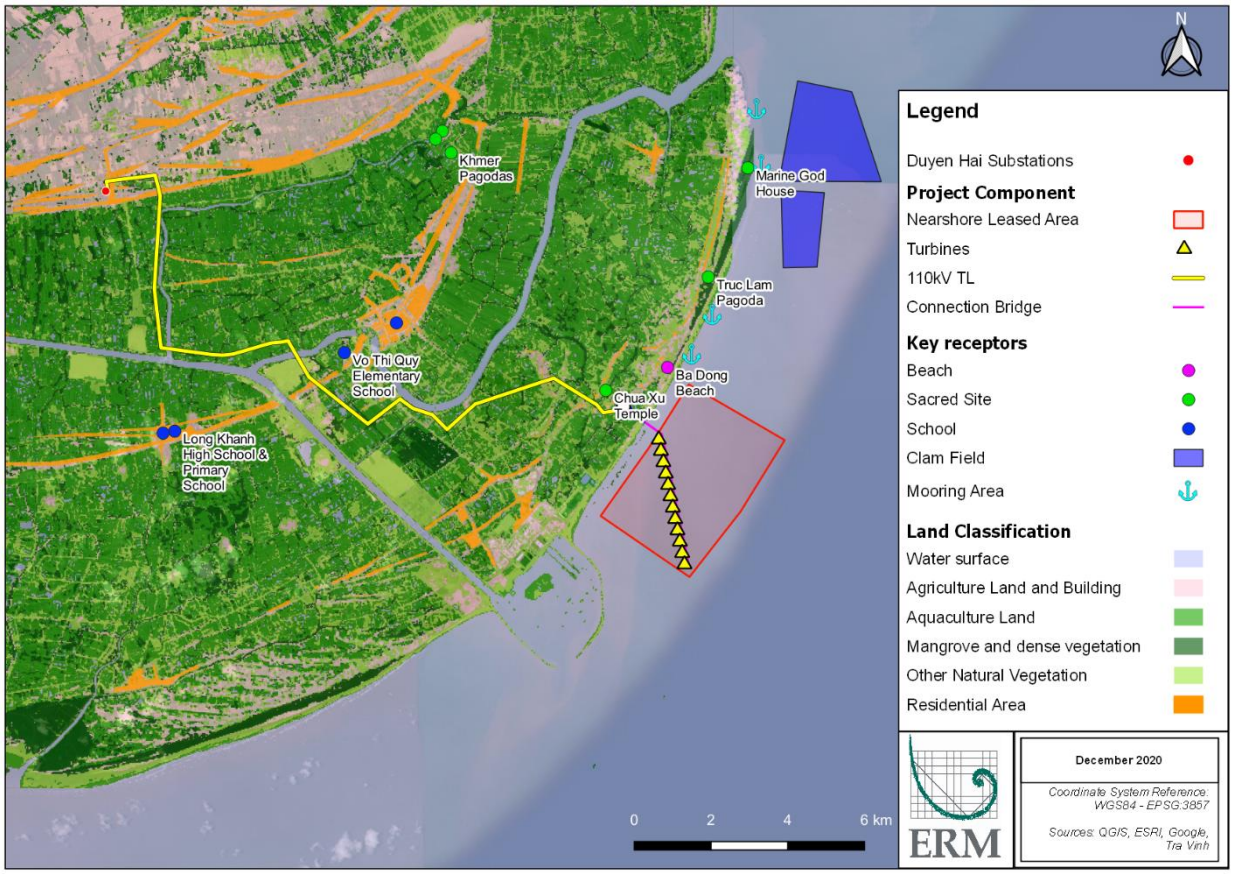
HEALTH

According to a social economic report in 2016, 84.2% and 100% of population had insurance in the Duyen Hai Town and Duyen Hai District, respectively. Based on the statistical data 2019, Duyen Hai District has eight medical facilities, 40 patient beds, 61 medical staff and 12 pharmaceutical staff. There were significant discrepancies between the opinions of local cadres and villagers in terms of the quality of health services.

Livelihoods and Land Use

Key livelihoods landscape features are summarized as follows:

- The area includes mostly monoculture of shrimps and poly-culture of some commercial crops such as watermelon and chilli;
- Aquaculture farms occupy the majority of land between Road 914 and the coast and mostly located close to river/ water source;
- Agriculture farms occupy the west area of Road 914 and intermediate area between the Ba Dong River (as Ba Động in Vietnamese) and the breakwater along the coast of the Dan Thanh and Truong Long Hoa Communes;
- There are some clam farms along the coast of Truong Long Hoa Commune.



Land use in Duyen Hai District and Duyen Hai Town in 2016 was mostly for agriculture production (78% of total land use). Agriculture land includes land for agriculture, forestry, aquaculture, and other agricultural production.

04.

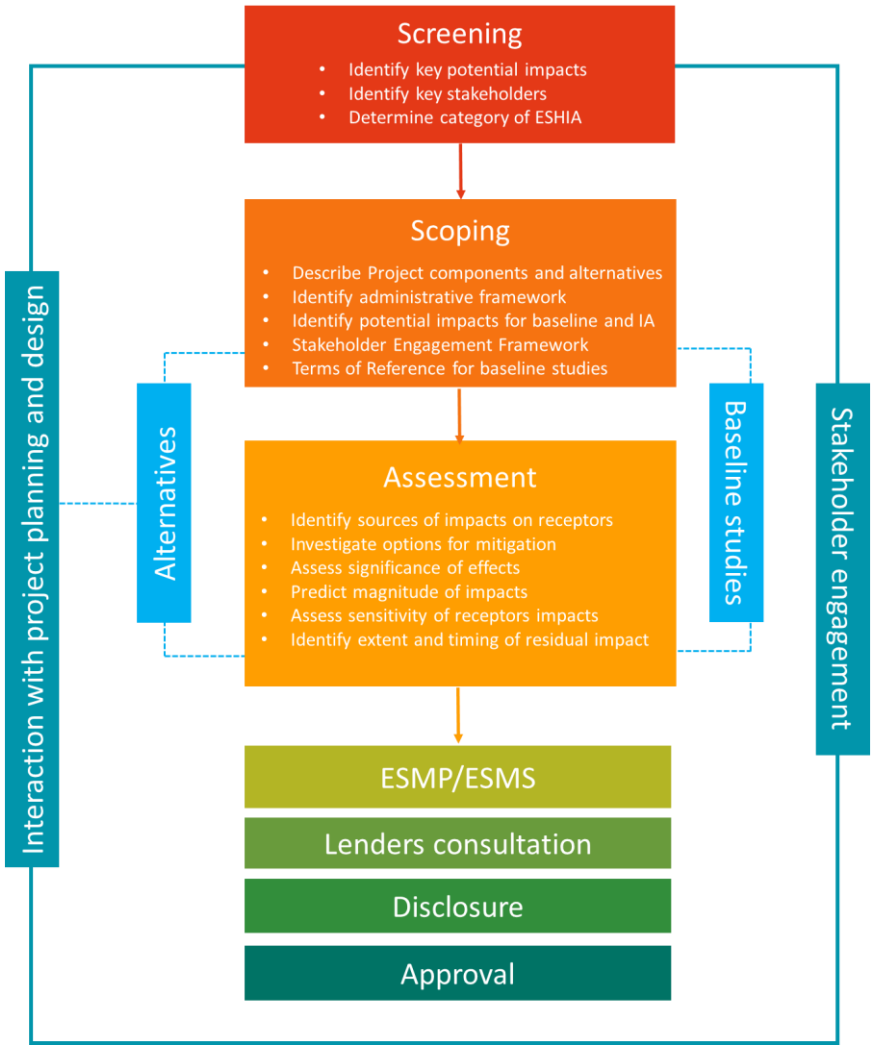
Assessment Approach

The framework

The Project is committed to meeting Environmental standards from Vietnamese regulatory framework are addressed in the approved EIA (Decision No. 1080QD-UBND of People's Committee of Tra Vinh Province dated June 10th, 2019) and international IFC Performance Standards.

The combined framework ensures that project follows highest level of EHS* standards.

ESIA approach



**EHS: Environment, Health and Safety*

05.
Impact Assessment

The following sections summarize the key aspects of Project that required an impact assessment.

Onshore Environment

Air
Noise
Freshwater
Terrestrial Biodiversity
Visual Impact
Shadow Flicker
Electromagnetic Interference

Offshore Environment

Marine Water
Marine Biodiversity

Unplanned Event

Fire and Explosion including UXO
Spillage of fuel, oil, chemicals and hazardous materials
Vehicle/vessel accident
Blade Throw
Transmission Line Snapping and Transmission Pylon Collapse

Socio-economic

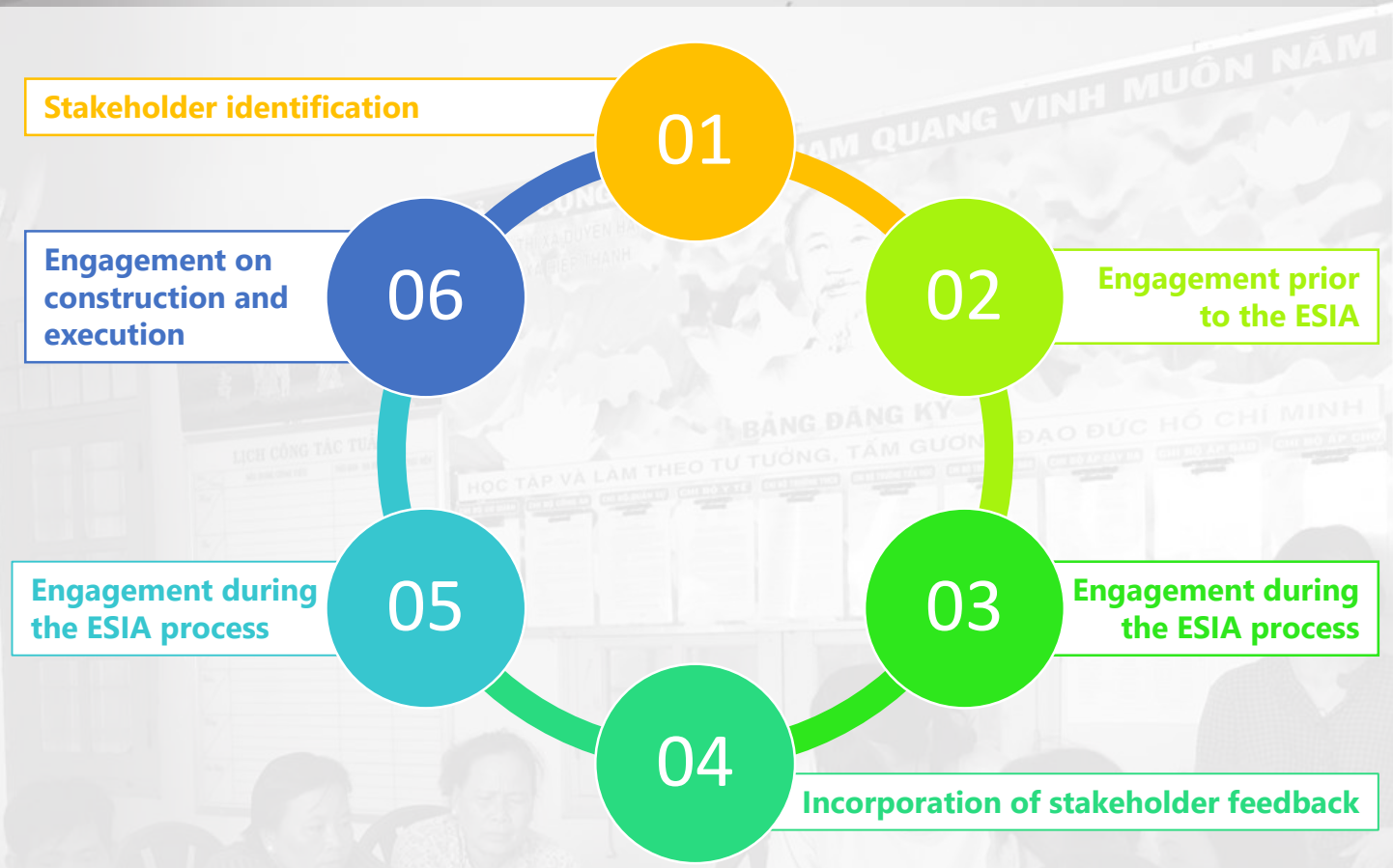
General Disturbance to Local Community
Economic Displacement and Cultural Heritage
Local Economy
Cultivation, Aquaculture and Fishing Activities
Community Health, Safety and Security

Cumulative Impact Assessment

Noise levels
Bird and bat Mortality Risk
Seawater Quality and Marine Fauna
Economy and Employment
Community Health and Safety
Infrastructure and Public Services
Traffic
Cultural Heritage
Visual Amenity

The approach for engaging with stakeholders, including communities, authorities and other developments highlight the need for on-going and appropriate communication between the Project Owner and interested or affected parties through all stages of a Project's lifecycle. The stakeholder engagement framework comprises various activities at different stages of the Project.

As part of its ongoing stakeholder engagement process, the Project Owner has developed a Stakeholder Engagement Plan, which will form the basis for its integrated, structured and formal ongoing engagement process for all phases of the Project.



Grievance Mechanism

The grievance mechanism will address all grievances raised by stakeholders. A grievance, also referred to as a complaint, concern or issue, is a statement made by a stakeholder as a result of a real or perceived notion that something is unsatisfactory or unacceptable as a result of the Project. This includes grievances associated with environmental and social matters.

Impact Assessment:
Onshore Environment

Fresh water (construction phase)
Scoped in receptors: fresh water bodies
Activities attributing to impacts: discharges from facilities mainly during construction phase
Key mitigation measures (MMs): check equipment regularly, raise awareness for staff and workers, select appropriate methods and equipment, prohibit discharging directly into water surface bodies, manage waste and hazardous in compliance with regulations
Residual impacts – after MMs: negligible

Electromagnetic Interference
Scoped in receptors: human health
Activities attributing to impacts: the formation of EMF along the transmission line, at the substations and wind turbines
Key mitigation measures (MMs): Conduct regular checking/ maintenance in the first year to ensure the safe condition of the tower and the cable; provide signage at each tower with emergency phone numbers; conduct a series of H&S focused consultation activities with the transmission line communities
Residual impacts – after MMs: negligible

Air and Climate
Scoped in receptors: residential areas, construction workers and farm house near the project area
Activities attributing to impacts: increased dust and exhaust emissions from vehicles and machinery
Key mitigation measures (MMs): comply with regulations on road traffic for vehicles and transport capacity; conduct water spraying frequently during dry season; install fence at least 1m around construction site
Residual impacts – after MMs: negligible

Habitats
Key effects: loss of habitat, degraded habitat
Activities attributing to impacts: vegetation clearance; dust, erosion, release of contaminants and invasive species cause habitat degradation
Key mitigation measures (MMs): weekly checks during construction are to occur along all Project boundaries; implementation of the workforce training program for fauna/flora awareness, develop and implement appropriate emergency spills response procedures
Residual impacts – after MMs: minor

Impact on Bats
Key effects: bat species
Activities attributing to impacts: hunting and poaching by workforce, wind turbine and transmission line collision
Key mitigation measures (MMs): the Project prohibits illegal hunting and poaching; the Project will train labour to raise awareness related to biodiversity values, ensuring all night lighting of the turbines consists of LED lights
Residual impacts – after MMs: minor

Critical Habitat bird species
Key effects: loss of habitat, disturbance and displacement, fragmentation
Activities attributing to impacts: the presence of the project is predicted to cause the loss of airspace, loss of foraging and roosting sites of Critical Habitat bird species; the project components especially WTGs disturb the movement of birds
Key mitigation measures (MMs): the Project prohibits illegal hunting and poaching; the Project will train staff to raise awareness related to biodiversity values; implement measures regarding technical design to reduce collision risk (e.g. feathering the blades during low wind conditions); ensuring the power towers and transmission lines to meet the safety standards
Residual impacts – after MMs: minor

Impact Assessment:
Offshore Environment

Noise
Scoped in receptors: human health
Activities attributing to impacts: construction activities and noise from onshore substation during operation phase
Key mitigation measures (MMs): ensure that all plant, equipment and vehicles movements are optimised in a forward direction; select low-noise WTGs and maintain regularly
Residual impacts – after MMs: negligible during construction phase and operation phase

Shadow Flicker
Scoped in receptors: human health
Activities attributing to impacts: Spinning of turbine blades cause shadows to flicker during the day
Key mitigation measures (MMs): planting trees or use higher fencing and curtains to prevent the shadow from reaching the homes of people in the area
Residual impacts – after MMs: negligible

Visual
Scoped in receptors: human
Activities attributing to impacts: presence of wind turbines will have an impact on the visual aesthetics during operation phase
Key mitigation measures (MMs): Use of materials that will minimise light reflection should be used for all Project components
Residual impacts – after MMs: minor

Sea water
Scoped in receptors: sea water quality
Activities attributing to impacts: increased turbidity, increased contaminants and waste discharge from project components
Key mitigation measures (MMs): select appropriate methods and equipment; supervise the implementation of the proposed mitigation measures
Residual impacts – after MMs: negligible

Marine Biodiversity
Key effects: disturbance and displacement, barrier creation, fragmentation and edge effects, mortality due to vehicle collision
Activities attributing to impacts: noise, vibration as results of pile driving or electromagnetic fields (EMF) and heat emission may disturb the marine fauna activities. These species are projected to avoid the Project area. The Project's presence is likely to fragments the marine habitat. Additionally, mortality of marine mammals may occur due to vessel or machinery strike as a result of increased number of vessels during construction or maintenance
Key mitigation measures (MMs): pilling works will comply with noise emission standard; EMF and heat emission from the export cables will be controlled to an acceptable level, through engineering factors. Vessel speed within the affected zone will be managed.
Residual impacts – after MMs: negligible

Impact Assessment:
Socio-economic and Health

Economic Displacement, Cultural Heritage and Assets
Key effects: physical and economic displacement
Activities attributing to impacts: permanent land loss, temporarily occupied for transmission line construction and laydown area and/or will only be affected by crop height restriction due to safety reasons
Significance of impacts: moderate
Key mitigation measures (MMs): process grievance mechanism procedure, livelihood restoration plan and stakeholder engagement plan; monitor the land acquisition process to comply with Vietnamese regulation; compensation for assets under right of way and land acquisition audit also proposed; detailed measurement survey will include asset survey and supervise implementation of all proposed MMs
Residual impacts – after MMs: minor

Indigenous People
Key effects: impacts on livelihoods, cultural heritage, positive impacts on Khmer people
Activities attributing to impacts: land acquisition, construction activities, job opportunities
Significance of impacts: minor
Key mitigation measures (MMs): project owner establish SEP, CDP together with LRP to serve as a comprehensive guidance for the Project owner in terms of community development actions, consultation with Khmer community will need to adopt culturally relevant approach following Informed Consultation and Participation (ICP) mechanism
Residual impacts – after MMs: minor

Human Heath, Safety and Security
Key effects: transmitted diseases, noise, dust, solid waste, social evil, conflict between local people and migrant labor
Activities attributing to impacts: construction activities-related (such as soil disturbing activities, storage of materials such as concrete, and transportation of materials) increases in noise, dust, pollution and traffic incidents, migrant labor influx
Significance of impacts: minor
Key mitigation measures (MMs): manage gasoline and oil used for construction and transportation vehicles, prepare reasonable construction plan, keep major noise in appropriate locations, erect signs around project area, and strictly apply MMs to activities during night time
Residual impacts – after MMs: minor

Cultivation, Aquaculture and Fishing Activities (Construction phase)
Key effects: production efficiency, dust, wastewater and solid waste
Activities attributing to impacts: project's construction, earthworks, concreting and transportation
Significance of impacts: minor
Key mitigation measures (MMs): disclose the construction timeframe and safety plan prior to construction phase, conduct regular consultation with local fishers; consult with local authorities, affected households and relevant parties to develop and implement community development plan; MMs also need to be monitored regularly
Residual impacts – after MMs: minor

Cumulative Impacts

Impacts from the Project and other projects in the area may combine to have increased effect – some of these will be positive for the community. There will be positive combined impacts on the economy and number of jobs. There may however be increased levels of traffic during the construction phase.

Local Economy and Employment
Key effects: positive impacts on local economy
Activities attributing to impacts: labour requirement from the project in construction phase; demand for materials and services and tourism development in operation phase
Significance of impacts: minor

Environment and Social Monitoring

To effectively manage social and environmental issues idenfied during the impact assessment, an Environmental and Social Management Plan (ESMP) has been developed. As required by this ESMP, a range of detailed management plans will be developed and implemented for each specific phase of the Project. The responsibility for the implementation of these plans will lay variously with Project Owner, contractors and sub-contractors.

Proposed Management Plans identified in the Regulatory EIA

No.	Management Plan	Prepared by	Implemented by	
			Pre-construction and Construction	Operation
1	Fire Prevention and Fighting Plan	Contractor	Contractor	Project Owner
2	Equipment Transportation Plan	Contractor	Contractor	N/A
3	Traffic Management Plan	Contractor	Contractor	N/A
4	Construction Waste Management Plan	Contractor	Contractor	N/A
5	Occupational Health and Safety Management Plan	Contractor	Contractor	Project Owner
6	Dredging Management Plan	Contractor	Contractor	N/A

Proposed Management Plans identified in the ESIA

No.	Management Plan	Prepared by	Implemented by	
			Pre-construction and Construction	Operation
1	Biodiversity Action Plan (BAP), including Biodiversity Monitoring and Evaluation Plan, Invasive Species Management Plan, Bird Management Plan, Wildlife Shepherding Protocol, site rehabilitation plan.	ESIA consultant	Contractor	Project Owner
2	Oil and Chemical Spill Response Plan	EPC contractor	EPC contractor	Project Owner
3	Sediment and Erosion and Control Plan	EPC contractor	EPC contractor	Project Owner
4	Emergency Prevention and Response Plan (EPRP)	EPC Contactor	EPC Contractor	Project Owner
5	Stakeholder Engagement Plan (pre-construction and throughout the project), including Grievance Mechanism Procedure	ESIA consultant	Project Owner	Project Owner
6	Community Development Plan	ESIA consultant	Project Owner	Project Owner
7	Site Rehabilitation Plan	EPC Contactor	EPC Contractor	Project Owner
8	Livelihood Restoration Plan (LRP)	ESIA consultant	Project Owner	Project Owner

The Stakeholder Engagement Plan (SEP) was developed alongside the ESIA and is being implemented.
The Project will have ultimate responsibility for implementing the management plans and for ensuring, via contract conditions, that the EPC contractors are obligated to implement all mitigation and management measures relevant their activities.

Environment and Social Monitoring

Monitoring will be implemented to verify the effectiveness of the management and mitigation measures contained within the management plans. The Project is expected to:

- Verify effectiveness of management and mitigation measures
- Ensure compliance with Applicable Standards
- Develop adaptive management measures within the plans to account for changes in the environment and social status, potential changes to the Project schedule and/or non-planned events
- Monitoring the status of, and impacts on, identified sensitive receptors
- Provide an early warning that any of the control measures or practices are failing to achieve their desired performance and ensure changes can be implemented to remedy these practices
- Determine whether environmental and social changes are attributable to Project activities, or as a result of other activities or natural variation
- Provide a basis for continual review and improvements to Project design and execution

Detailed and specific monitoring measures will be developed and included within the relevant management plans. They will be developed to provide robust and defensible data with adequate replication (through time and space). Impact monitoring will be undertaken during the Project's lifetime to verify the predicted levels of residual impacts from the Project and the effectiveness of the various management plans.