Site-Specific Environmental and Social Impact Assessment (ESIA)

Suez Wind Energy BOO Wind Power Plant 1.1 GW – SWE South (PLOT 2)

Environmental and Social Management System

October 2024

DRAFT

REV-1

Client:

Prepared by:

EcoConServ
12 El-Saleh Ayoub St., Zamalek Cairo, Egypt, 112111
Tel: + (2 02) 2735 9078 / 2736 4818
Fax: + (20 2) 2736 5397

ECO Consult
Jude Center, Salem Al-Hindawi Street, Shmeisani, Amman, Jordan
Tel: 962 6 569 9769
Fax: 962 6 5697264
E-mail: info@ecoconsult.jo

Prepared for:

RCREEE - Regional Centre for Renewable Energies and Energy Efficiency
Hydro Power Building, Floor 7
Block 11, Piece 15, Melsa District
Ard el Golf, Nasr City, Cairo
Arab Republic of Egypt

Issue and Revision Record:

Template Code			**Template Revision No.**	**REV - 1**
Version	**Date**	**Description**	**Reviewed By**	**Approved by**
REV 0	9 June 2024	Draft ESMS Manuel		
REV 1	8 Oct 2024	Final ESMS Manuel		

Disclaimer:

This report should not be relied upon or used for any other project without an independent check being carried out as to its suitability and prior written authority of the Regional Centre for Renewable Energy and Energy Efficiency (RCREEE) being obtained. EcoConServ and ECO Consult accepts no responsibility or liability for the consequence of this document being used for a purpose other than the purposes for which it was commissioned.

This Report is confidential to the Regional Centre for Renewable Energy and Energy Efficiency (RCREEEE) and the Consultant accepts no responsibility of whatsoever nature to third parties whom this Report, or any part thereof, is made known. Any such party relies upon this Report at their own risk.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1 INTRODUCTION

1.1 Background

Through the BOO mechanism, ACWA Power and Hassan Allam Utilities B.V (hereafter referred to as 'the Developer') has been selected for the development of a 1,100 MW Wind Power Project (Suez Wind Energy – (SWE) with a capacity of 1,100MW. SWE is to be developed over two (2) Plots – the first located within the northern parts of the Gulf of Suez – Plot 1 and the second located within the southern parts of the Gulf of Suez - Plot 2 (hereafter referred to as 'the Project'). The Developer will be seeking financing for the Project from prospective lenders, including International Financial Institutions (IFIs). Therefore, the Developer wishes to design and manage the project in accordance with good international industry practice, including IFI Environmental and Social (E&S) requirements. IFIs will require disclosure of such E&S requirements as provided in further details in "Section 3.5". The disclosure process includes a 60-day disclosure period for some IFIs such as the European Bank for Reconstruction and Development (EBRD) and a 120-day disclosure period for other IFIs such as the African Development Bank (AFDB).

The E&S documents include:

- Non-Technical Summary (NTS)
- Stakeholder Engagement Plan (SEP)
- Environmental and Social Impact Assessment (ESIA) including OHTL assessment
- Critical Habitat Assessment (CHA)
- Environmental and Social Management System (ESMS) Manual
- Biodiversity Management Plan (BMP)
- Flood Study
- Bat Addendum Report
- Environmental and Social Action Plan (ESAP)
- Scope of work: Project Strategic Environmental and Social Assessment and Cumulative Impact Assessment. *Note: the study itself will be undertaken throughout the disclosure period*
- Cumulative Effect Assessment (CEA)
- Biodiversity Action Plan (BAP)
- Bird Migration Study for Suez Wind Energy ACWA Power BOO Wind Power Plant 1.1 GW during Spring and Autumn seasons, 2022
- Spring Bird Migration Study Suez Wind Energy BOO Wind Power Plant 1.1. GW – SWE Plots 1 & 2, 2023
- Autumn Bird Migration Study Suez Wind Energy BOO Wind Power Plant 1.1. GW – SWE Plots 1 & 2, 2023

The ESIA is considered a key document in assessing and managing environmental and social risks related to the Project. The key output of the ESIA is the Environmental and Social Management Plan (ESMP) which aims to provide high level mitigations and requirements for managing the environmental and social risks anticipated from the Project.

Throughout the Project's construction and operation phase an Environmental and Social Management System (ESMS) must be implemented by all relevant parties (i.e. Developer, EPC Contractor and Project Operator). The ESMS must be project and site specific and must build on and take into account the requirements of the ESMP.

This document presents the Project's ESMS Manual. In general, the objective of the ESMS Manual is to present the overall structure and outline of the ESMS and provide details on key components aimed at managing key risks and impact, to be implemented for the Project during both the construction and operation phase. The ESMS is applicable to all Project works, including those conducted by contractors.

1.2 Project Location

The Project is located in the Red Sea Governorate of Egypt, around 290 km to the southeast of the capital city of Cairo (Figure 1). More specifically, the Project site is located near the Red Sea shoreline and within the Ras Gharib District of the Red Sea Governorate, where the closest residential areas include Wadi Dara Village around 0.9 km to the west. The Project site is located within the Ras Gharib City (or District) and therefore administratively is under the Ras Gharib City Council. The Ras Gharib District is further divided into Ras Gharib town as well as 2 rural (village) local units (Zaafarana and Wadi Dara). The closest community settlement to the Project site is Ras Gharib city located 37.7 km to the northeast. (Figure 2).

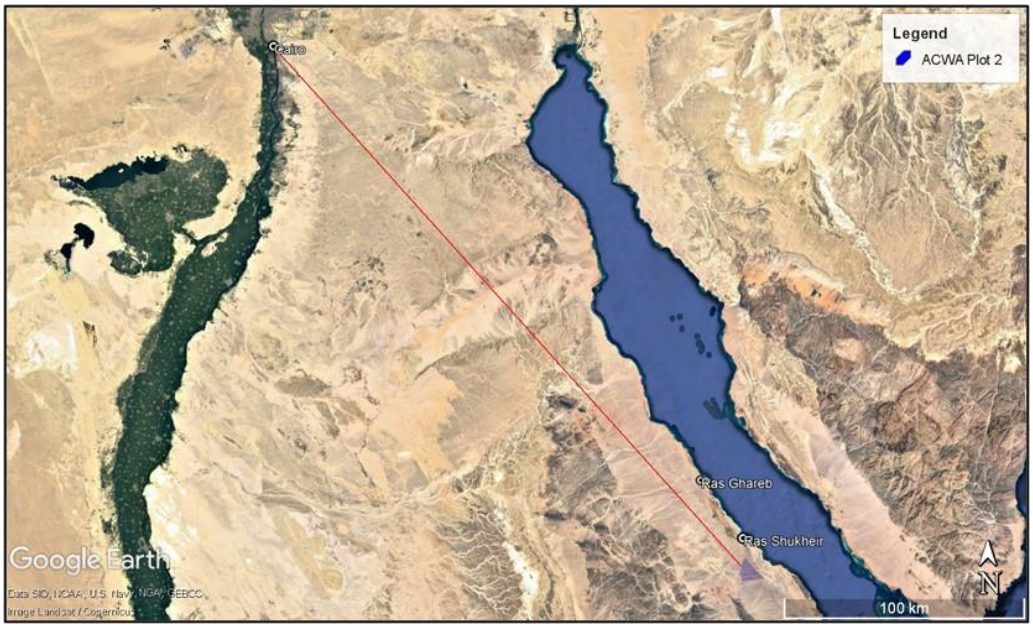

Figure 1: Project Site in Relation to the Capital City of Egypt

Figure 2: Project Site in Relation to Closest Communities

1.3 Project Components

The key components of the Project are discussed below.

- Wind turbines: the wind turbines which convert the kinetic energy in wind (i.e. movement of wind) into electricity. The key turbine characteristics and specifications are presented in the table below.

Component	Description
Project Generation Capacity (MW)	550
Number of Wind Turbines	69
Rated Power per Turbine (MW)	8.0
Rotor Diameter (m)	171
Hub Height (m)	100
Tip height (m)	185.5
Infrastructure and Utilities	This includes: (i) internal road network; (ii) underground MV cables; (iii) warehouse and offices; (iii) substation; and (iv) associated facilities such as the high voltage overhead transmission line.

- Foundations: will be constructed to bolt the tower of the turbine in place. There foundations (one for each turbine), where each foundation typically consists of a circular footing of maximum 25m diameter. The foundation will be built with concrete reinforced with structural corrugated steel.
- Crane Pad: next to each wind turbine to accommodate cranes for the installation of the turbines and for maintenance activities. Each crane pad will be around 4,000 m^2 in area
- Building Infrastructure: onsite building infrastructure will be required for the daily operation of the Project. Such buildings could include an administrative building (offices) used for normal daily operational related work, control room and a warehouse;
- Medium Voltage (MV) Cables: The wind turbines will be connected through medium voltage cables to the substation. The connection between the turbines and the substation will be made using underground transmission cables buried in ground by trenches.
- Communications Network: the Project will have a Supervisory Control and Data Acquisition (SCADA) system for the remote operation of the facilities. A communication network will be installed which will consist of fibre optic cables connecting the turbines together to the SCADA system at substation. The communication system will be installed in the same trenches as the MV cables discussed above.
- Substation: the substation is a high voltage transformer substation that collects and converts the output from the turbines to a higher voltage that is appropriate for connection with the High Voltage National Grid (220 kV). One substation will be located within the Project area.
- Road network: a road network will be required for installation of the turbines during the construction process and for ease of access to the turbines for maintenance purposes during operation.

Associated Facilities

It is important to note that the Project also includes an electricity transmission line. The electricity generated from the Project will be connected from the substation (discussed above) to the National Grid through an Overhead Transmission Line (OHTL) that will be developed by Egyptian Electricity Transmission Company (EETC).

EETC is considered a governmental entity. Developer will liaise and interact with the EETC to ensure that that the OHTL is developed in line with IFI E&S requirements.

EETC will be fully responsible for planning, developing, constructing, commissioning and operating the OHTL. The proposed OHTL is approximately 47 km long and will be a *double circuit line (i.e. 2 lines running next to each other)* designed to connect the wind farm to the national grid.

Figure 3: Location of OHTL Route

The main component of the OHTL is the transmission towers. The tower will have a height of around 67m. In addition, there will be one (1) tower approximately every 500m. Therefore, a total of 188 towers are expected since it will be a double circuit line *(i.e. 2 lines running next to each other).*

1.4 Project Phases and Schedule

They key phases anticipated for the construction and operation phase of the Project are summarized below.

Construction Phase

- Phase 1: Engineering and Documentation: This involves obtaining the permits required for the project and undertaking studies for development (e.g. geotechnical, topography, environmental, etc.) as well as preparing the detailed design for all project components.
- Phase 2: Assigning of EPC Contractor and Subcontractors: This includes tendering and selection of all subcontractors for the Project to include civil, electrical and mechanical contractors.
- Phase 3: Procurement and Delivery of Materials: This involves the procurement of all materials required for the project development to include wind turbines as well as other material required for civil works, mechanical works, and electrical works.
- Phase 4: Mobilization and Early Works: This includes undertaking all mobilization and early works to include installation of site offices, preparation of laydown area, preparation of site storage and workshop area, civil works for construction of all required internal road networks, and other as appropriate.
- Phase 5: Preparation and Construction of Turbines: This will involve all civil works (excavations, foundations, drainage, etc.), mechanical works, and electrical works (underground works, low voltage works, earthing and lightning protection, etc.).
- Phase 6: Erection of Turbines: This will involve all works related to assembly and installation of the turbines through onsite cranes.

- Phase 7: Construction of Substation: This includes the civil and electrical works for construction of the substation located onsite and which will include civil works (grading, foundations, drainage, etc.) and electrical works (AC works, Medium Voltage works, etc.).
- Phase 8: Construction of Control Building and Warehouse: This includes the civil works, mechanical, and electrical works for construction of the control building and warehouse.
- Phase 9: Testing and Commissioning: Commissioning tests involve standard electrical tests for the electrical infrastructure as well as the turbines, and inspection of routine civil engineering quality records. Careful testing at this stage is vital if a good quality wind farm is to be delivered and maintained.

Operation Phase

The operation phase includes the normal daily operation of the wind farm. In addition, maintenance will also take place through a dedicated team. Typical routine maintenance time for a modern wind turbine is 40 hours per year. Non-routine maintenance may be of a similar order. Although minimal, maintenance activities may include turbine and rotor maintenance, lubrication of parts, washing of blades, maintenance of electrical components, full generator overhaul, etc.

Project Schedule

According to the current timeline information available by the Developer, construction of the Project is anticipated to commence around Q4 2024, and will require approximately 30 months for construction and commissioning. Operation of the Project is therefore anticipated to commence in 2027 for a period of 25 years based on the PPA signed.

1.5 Involved Entities

Different entities are involved in the construction and operation phase of the project. Responsibilities of each entity are listed in the text below along with a general description of their roles.

- *Suez Wind Energy (SWE):* The owner and developer of the Project (hereafter referred to as 'the Developer'). SWE is a consortium composed of ACWA Power and Hassan Allam Utilities B.V;
- *Egyptian Environmental Affairs Agency (EEAA):* the official governmental entity responsible for protection of the environment in Egypt. The EEAA is responsible for approval of the Environmental and Social Impact Assessment (ESIA) and making sure it complies with the "Environmental Protection Law No. 4 of 1994" and granting the environmental clearance for the Project;
- *International Financing Institutions (IFIs):* entities that provide financing to the Developer for the development of the Project. Such IFIs ensure that the Project is developed in accordance with GIIP requirements. At this stage, the IFIs have not been determined yet;
- *Engineering, Procurement, and Construction (EPC) Contractor:* responsible for preparing the detailed design and layout of the Project; supply of the material and equipment (e.g. wind turbines); construction of the Project and its various components (turbines, internal roads, building infrastructure, and, etc.). The EPC Contractor for this Project has not been assigned yet.
- *Owner's Engineer (OE):* engineering company appointed by the Developer to ensure EPC Contractor develops the Project with the required technical specifications. Owner's Engineer is also responsible for supporting the Developer in ensuring EPC Contractor adherence to E&S requirements and obligations.
- *Independent Environmental and Social Consultant (IESC):* consultant that is engaged by and on behalf of the IFIs to ensure that the Project is being developed in accordance with their E&S requirements.
- *Project Operator:* responsible for Operation and Maintenance (O&M) of the Project. The O&M Contractor has not been assigned to date;

- *Egyptian Electricity Transmission Company (EETC):* the entity that signed the Power Purchase Agreement (PPA) with the Developer. It is responsible for designing, building and operating the associated interconnection facilities including the Overhead Transmission Line (OHTL) connecting the Project site to the existing national grid.
- *New and Renewable Energy Authority (NREA):* is entity responsible for allocation of the land for the development of the Project;
- *Regional Center for Renewable Energy and Energy Efficiency (RCREEE):* Non-Governmental Organization (NGO) that is involved in managing E&S issues related to the Project including selection of the ESIA Team (as below). In addition, RCREEE will be responsible for implementation of the Active Turbine Management Plan (ATMP) during the operation phase of the Project.
- *Consultant (EcoConServ, ECO Consult and Safe Soar)*: hereafter referred to as the 'ESIA Team' who is the ESIA Practitioner and the consultant commissioned by the Developer to prepare the ESIA for the Project in accordance with the requirements of the "Law No. 4 of 1994" as well as GIIP requirements.

2 ROLES AND RESPONSIBILITIES

This section identifies the ESMS roles and responsibilities for key personnel involved in the Project during construction and operation. These roles must be included in the job descriptions and be known by the concerned employees. Throughout the Project, project management and employees, all contractors/lower-tier contractors will comply with this plan as relevant.

2.1 Construction Phase

The figure below presents the organizational structure for the construction phase. Based on the organization structure, this section identifies the lines of authority and roles and responsibilities for those personnel that are involved in the E&S management during construction.

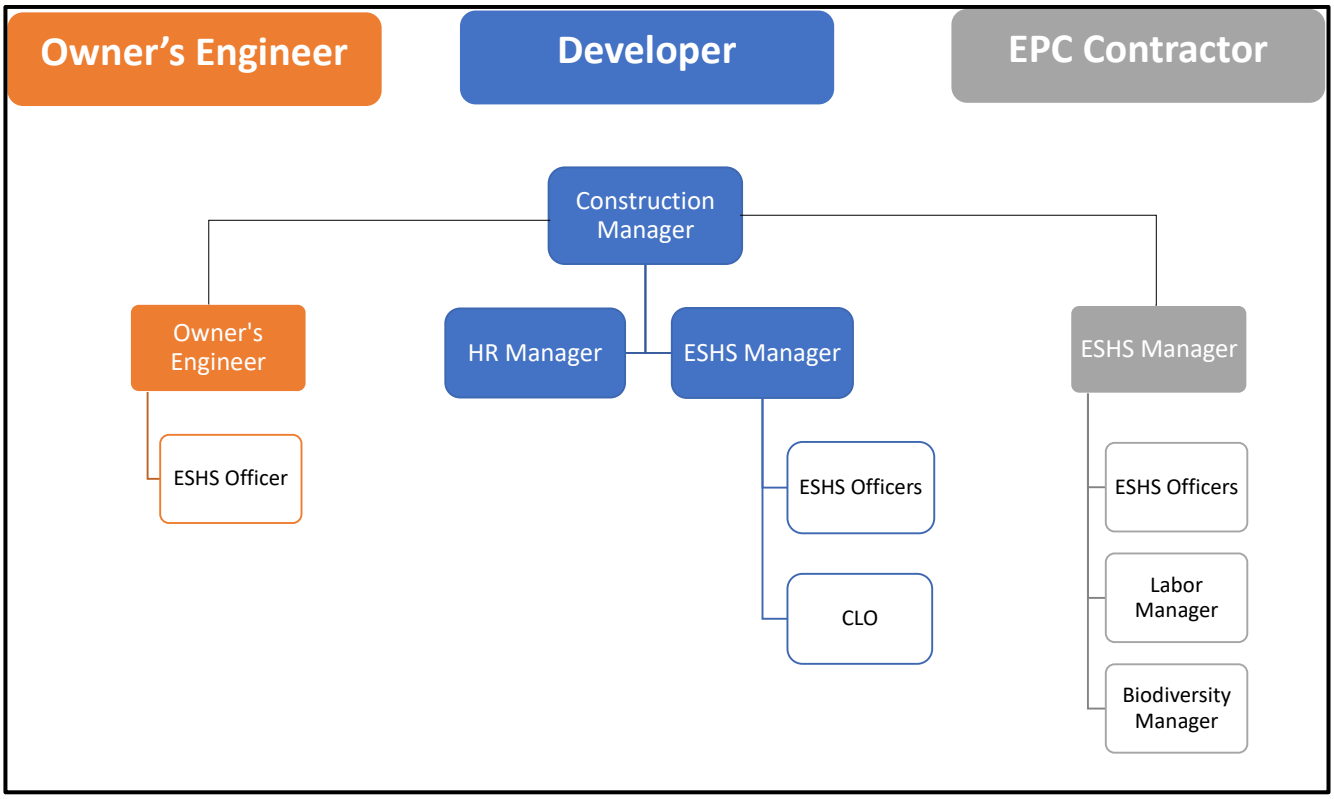

Figure 4: Developer's Organizational Structure for Construction Phase

Construction Manager – Developer

- Overall monitoring of E&S performance of the Project and defines feasible and sustainable actions to enhance it
- Ensures the availability of required resources to properly implement the E&S plans and requirements
- Promotes leadership in E&S and implement E&S improvement initiatives
- Provides the means to control the E&S risks on all activities of the Projects
- Enhances the E&S compliance culture through exemplarity and commitment
- Chairs monthly E&S Committee meetings (as detailed further in Section 7.1)
- Guarantees that all employees under his/her authority and responsibility are medically fit, trained, accredited, equipped and competent to perform their work
- Ensures the consistent enforcement and implementation of all programs, policies and procedures
- Ensures that EPC Contractor and subcontractors meet E&S requirements of the Project

E&S Manager – Developer

- Supports Construction Manager in steering and implementing the E&S management of Project
- Focal Point for all Environmental and Social (E&S) and social issues including liasing with lenders and their E&S advisors
- Maintains and updates E&S rules, regulations and guidelines, local/international requirements as applicable to the project
- Advises on legislative changes concerning E&S which may affect the Project
- Develop, maintains & monitors the E&S plans (as identified in Section 3.3)
- Reviews and approves all EPC Contractor and subcontractors' E&S plans as required
- Ensures the implementation and verification of corrective and preventive actions
- Supports the management in the promotion and improvement of E&S awareness
- Assists in the investigation of any accident / near miss and compiles the necessary reports
- Communicates with EPC Contractor and subcontractors and advises on their E&S matters
- Participates to all E&S meetings (as detailed further in Section 7.1)
- Supports the EPC Contractor and subcontractors' managers in identifying and assessing the E&S risks of their activities, as well as in defining mitigation measures to control these risks
- Plans, organizes, participates and conducts E&S audits (as detailed in Chapter 8)
- Keeps all records as required

Environment, Social, Health and Safety (ESHS) Officer – Developer

- Provide support to the E&S Manager in implementing the requirements of ESMS and other Project requirements.
- Oversee daily implementation of ESHS requirements and mitigation measures and report findings to E&S Manager.
- Ensure personnel and subcontractors adhere to E&S regulations through supervision and guidance
- Conduct daily site inspections, documenting subcontractor activities, non-compliances, incidents, complaints, and training records.
- Collaborate with the E&S Manager to address internal and external E&S-related complaints
- Investigate environmental incidents, proposing corrective actions and reporting to the E&S Manager
- Participate in E&S meetings to promote a safe and healthy work environment
- Verify that the workforce receives adequate training and information to perform work safely and in compliance with E&S standards

Community Liaison Officer (CLO) – Developer

- Monitor and maintain a positive profile of the project with the community and required stakeholders
- Manage day to day interaction with all stakeholders during the construction and operation phase as indicated within the project Stakeholder Engagement Plan (SEP) including (but not limited to) local community members and others
- Implement and manage stakeholder grievance mechanism
- Implement, monitor and report on the implementation of community support initiatives

Note: a male and female CLO will be appointed for the Project.

HR Manager – Developer

- Overall responsibility for implementation of HR, employment and labor management principles and requirements for Developer staff (as detailed in Chapter 6)
- Undertake and follow up on HR and labor management audit during construction and operation to ensure EPC Contractor compliance with the relevant requirements (as detailed in Chapter 8)

Owner's Engineer (OE)

Developer will appoint an Owner's Engineer (OE) for the project with the objective of ensuring that the EPC Contractor is adhering to the technical project specifications. OE will also be responsible for supporting the Developer in ensuring compliance of the EPC contractor with E&S requirements.

OE team will include an E&S officer who will be mainly responsible for supporting the Developer E&S Manager in undertaking and fulfilling his roles and responsibilities as identified earlier.

EPC Contractor Requirements

The EPC Contractor will be required to assign a full-time and suitably qualified onsite E&S Manager that will be responsible for undertaking the following responsibilities:

- Overall responsibility for development and implementation of EPC Contractor E&S Management System requirements (as identified in Section 3.3)
- Ensures the availability of required resources to properly implement the E&S plans and requirements
- Provides E&S reporting requirements as relevant (as identified in Section 7.4)
- Provides E&S training requirements as relevant (as identified in Section 7.2)
- Undertake E&S inspection and monitoring requirements as relevant (as identified in Section 7.3)
- Organize and participates in E&S meetings (as discussed in Section 7.1)
- Reports on E&S incidents
- Ensure that all subcontractors nominate sufficient E&S officers for the overall implementation of E&S plans and requirements as applicable.

The E&S Manager should be supported by 4-5 (depending on construction schedule) full-time and suitably qualified onsite E&S Officers, as well as a Labor Manager that will be responsible for ensuring that all labor and working conditions are met in accordance with the set plans (as discussed in "Section 5" in further details). 1 ESHS officer will be required for every 100 worker at any time.

Biodiversity Manager

Note: This position can be under the EPC Contractor or the Developer.

- Overall responsibility for implementation of all biodiversity related components (mitigation, monitoring, reporting, etc.) as indicated within the Biodiversity Management Plan (BMP);
- Focal Point for all biodiversity related issues including liaising with lenders and their E&S advisors on biodiversity related issues;
- Supports the management in the promotion and improvement of E&S awareness;
- Participates to all E&S meetings as required; and
- Keeps all records as required.

The biodiversity manager is expected to be supported by other biodiversity experts as part of the team as and when required.

2.2 Operation Phase

The figure below presents the organizational structure for the operation phase. Based on the organization structure, this section identifies the lines of authority and roles and responsibilities for those personnel that are involved in the E&S management during operation.

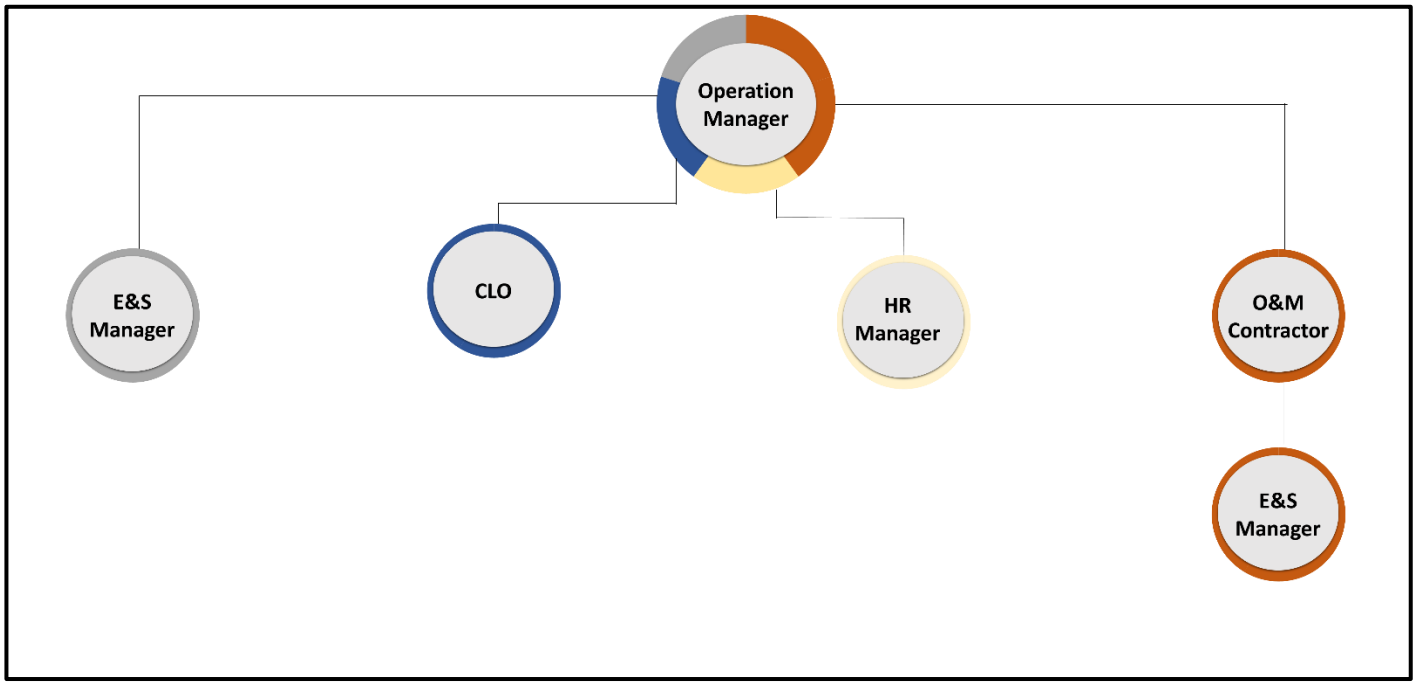

Figure 5: Developer Organizational Structure for Operation Phase

Operation Manager – Developer

- Similar to Section 2.1 but for operation phase

E&S Manager – Developer

- Similar to Section 2.1 but for operation phase. This will also include in particular liaising with E&S consultants and advisors including those involve in running the ATMP. The E&S Manager reports to the Operation Manager.

Community Liaison Officer (CLO) – Developer

- Similar to Section 2.1 but for operation phase

HR Manager – Developer

- Similar to Section 2.1 but for operation phase

O&M Contractor – TBD

- The O&M Contractor will be required to assign an onsite, full-time and suitably qualified E&S Manager. Roles and responsibilities will be similar to those identified in Section 2.1 but for operation phase.

Other Project Personnel

- Similar to Section 2.1 but for operation phase.

3 OVERALL STRUCTURE OF E&S MANAGEMENT SYSTEM

3.1 Objectives

This document outlines the ESMS that will be established and implemented by the Developer during the construction and operation phase of the Project. The objectives of this ESMS Manual include the following:

- Identification of the overall structure and outline for the ESMS that will be implemented for the Project during both construction and operation;
- Identification and outline of the key procedures and plans to be developed at a later stage that will handle the key impacts and risks during construction and operation.
- Identification of an institutional framework to ensure that such procedures and measures are implemented effectively and efficiently. This includes identification of roles and responsibilities, training requirements, monitoring and reporting requirements, and other as applicable;
- Identify approach for periodically auditing entities involved during the construction and operation phase to ensure all E&S requirements are implemented effectively; and
- Identification of a high-level framework for labour management that should be adhered to during the construction and operation phase.

3.2 E&S Policy

The Developer is committed to the protection of the environment and to the health and safety of its employees, contractors and the local community through all stages of the project life cycle. To achieve this goal, the Developer is committed to the following E&S Policy:

- Comply with all applicable national and local E&S laws and regulations as well as permitting requirements;
- Meeting internationally-accepted industry best practice E&S requirements, including those of the relevant International Financing Institutions (IFIs), in EBRD Performance Requirements, IFC Performance Standards, and World Bank Group (WBG) General EHS Guidelines;
- Achieve a target of Zero fatalities, Zero injuries and Zero significant environmental accidents
- Assessing and minimizing potential impacts to the community, worker and the environment;
- Establishing and maintaining an Environmental and Social Management System (ESMS) which identifies objectives and targets, risks and hazards, responsibilities, and includes systems of monitoring and reporting as well as incident and accident reporting and investigation;
- Realizing continual improvement in E&S performance by developing indicators, through monitoring and auditing performance, and by implementing corrective actions where needed;
- Reporting externally on E&S performance and encouraging dialogue with employees, local communities and other stakeholders to promote awareness;
- Setting and achieving targets that promote the efficient use of natural resources;
- Minimizing and managing all waste streams and where waste is generated ensure that it will be handled and disposed of safely and responsibly;
- Providing a place of work that is safe for everyone;
- Supporting and protecting internationally recognized human rights; and

- Ensuring Policy is disclosed at all Project facilities and ensure that Developer's employees and contractors, are made aware of this Policy and are adequately trained to manage the E&S risks and impacts of their actions.

The Developer will monitor and review this Policy on a regular basis to ensure that it continues to support and encourage a high standard of E&S performance.

The Project Manager will ensure conformance with the Policy and be responsible for its implementation and communicate the Policy to all levels of the organization.

Project Manager

[Ayman Fayek],

Suez Wind Energy

04 October 2024

3.3 Overall Structure for E&S Management System

This section identifies the overall structure for ESMS for the Project. This ESMS Manual along with the associated management plans identified below are collectively considered the ESMS that will be implemented for the construction and operation phase of the Project.

A. Project Developer –SWE

This ESMS Manual, along with the assessment studies and the associated management plans and programs identified below are the E&S plans and documents that have been prepared and are to be implemented by SWE. Such associated management plans should be read in conjunction with this ESMS Manual.

- Environmental and Social Impact Assessment (ESIA): the Environmental and Social Management Plan (ESMP) is the key outcome of the ESIA. ESMP requirements are to be implemented by SWE, the EPC Contractor and O&M Contractor as applicable. Relevant requirements of the ESMP are to be included within the relevant management plans discussed throughout this section.
- Stakeholder Engagement Plan (SEP): identifies a structured approach for stakeholder consultation and engagement to be implemented by SWE during the construction and operation phase. The SEP also includes a stakeholder grievance mechanism.
- Cumulative Effects Assessment (CEA): aims to identify priority Valued Environmental Components (VECs) at highest risk of cumulative effects from the wind power projects so that mitigation and monitoring measures are put in place to implement an adaptive management approach.
- Critical Habitat Assessment (CHA): aims to identify features that trigger the critical habitat status and priority biodiversity features.
- E&S Manual: i.e. this document, which is to be implemented by SWE.
- Active Turbine Management Program (ATMP): will be developed and implemented by RCREEE on behalf of SWE during the operation phase of the Project.
- Biodiversity Management Plan (BMP): will be developed by the Developer based on the outcomes of the CHA and ESIA /ESMP to identify key requirements and mitigations for key impacts anticipated particularly during the construction phase. The BMP will include some requirements to be undertaken by the Developer and others that will be enforced on the EPC Contractor.

- Corporate Social Responsibility (CSR): a CSR program will be developed that will identify a systemic approach for implementation for CSR activities with local communities to be implemented during the construction and operation phase

B. EPC Contractor – TBD

The table below identifies the components of the ESMS that will be required from the EPC Contractor. The following components identified below will be specifically applicable and are to be implemented by the EPC Contractor and subcontractors involved. Additional details on the requirements of such plans and the overall framework are provided in "Chapter 5".

The EPC Contractor will ensure that the ESMS builds on the outcomes of the ESIA study and its associated ESMP, as well as other documents as applicable which were identified above – such as this E&S Manual and the SEP.

- ESMS Manual that should be aligned with the requirements of the Developer's ESMS Manual (i.e. this document)
- Water Management Plan
- Waste Management Plan
- Air Quality and Noise Management Plan
- Traffic and Transport Management Plan
- Worker Influx and Accommodation Plan
- Occupational Health and Safety Plan
- Emergency Preparedness and Response Plan
- Security Management Plan
- Chance Find Procedure
- Worker Grievance Mechanism
- Labour and Working Conditions Management Plan
- Biodiversity Management Plan (as prepared by the Developer as noted under Point A above)

The above documents must be submitted to the Developer for approval before commencement of construction activities onsite.

C. O&M Contractor – TBD

The table below identifies the components of the ESMS that will be required from the O&M Contractor. The following components identified below will be specifically applicable and are to be implemented by the O&M Contractor and subcontractors involved (if any). Additional details on the requirements of such plans and the overall framework are provided in "Chapter 5".

- ESMS Manual that should be aligned with the requirements of the Developer ESMS Manual (i.e. this document)
- Water Management Plan
- Waste Management Plan
- Occupational Health and Safety Plan
- Emergency Preparedness and Response Plan
- Worker Grievance Mechanism
- Labour and Working Conditions Management Plan

The above documents must be submitted to the Developer for approval before commencement of operation activities onsite.

3.4 Key Impacts Anticipated during Planning and Construction

The tables below present the anticipated impacts from the Project during the construction and operation phase of the Project. In addition, the table also identifies the relevant management plans which includes the procedures and measures for handling the identified impact/risk and ensure it is eliminated or reduced to the greatest extent possible, as well as overall implementation responsibility.

Table 1: Key Anticipated Impacts During Construction

Receptor	Anticipated Impact	E&S Document	Overall Implementation
Land Use	There are purportedly potential informal land uses onsite which if improperly managed could result in potential conflicts and disputes. This includes the Ghafra system of the Bedouin groups and existing petroleum facilities within the area.	Stakeholder Engagement Plan	The Developer
Geology, Hydrology and Hydrogeology	Risk of soil and groundwater contamination during the various construction activities from improper waste management.	Waste Management Plan	EPC Contractor
Archaeology and Culture Heritage	Improper management of construction activities could disturb/damage potential archaeological remains which could be buried in the ground (if any).	Chance Find Procedure	EPC Contractor
Air Quality and Noise	Construction activities will likely result in an increased level of dust, particulate matter and pollutant emissions as well as noise levels which could affect workers as well as nearby receptors.	Air Quality and Noise Control Plan	EPC Contractor
Infrastructure and Utilities	Project could affect existing capacity of infrastructure and utilities related to water supply entailing constraints on the existing resources and users.	Water Management Plan	EPC Contractor
	If transportation activities of the various project components to the site are not properly managed beforehand, they could entail risk of damage to the existing roads and could be of public safety concerns to other users on the road as well as workers on site.	Traffic Management Plan	EPC Contractor
Community Health, Safety and Security	This could include but not limited to the following risks on nearby local communities: (i) trespassing of unauthorized personnel; (ii) potential impacts from presence of security personnel due to inappropriate management and conduct of security personnel towards the local communities; (iii) potential impacts from workforce influx during construction.	Worker Influx and Accommodation Plan	EPC Contractor
		Security Management Plan	EPC Contractor
		Stakeholder Engagement Plan	The Developer
Socio-economic	The Project is expected at a minimum to provide job opportunities for local communities as well as a social responsibility program. This, to some extent, could contribute to enhancing the living environment for its inhabitants, elevate their standards of living, and bring social and economic prosperity to local communities. It is important to note that most of these jobs are not long term and mostly during the construction phase and some of these jobs may not be for people from the closest community to the project.	Stakeholder Engagement Plan	The Developer
		CSR Plan	The Developer
Occupational Health and Safety	There will be some risks to workers health and safety from the various construction activities anticipated.	Occupational Health and Safety Plan	EPC Contractor

Worker Conditions and Rights	Inappropriate management of the workforce during the construction phase could entail several human right risks and violations by employing entities such as the EPC Contractor. This could include but not limited to (i) engaging child workers, (ii) confiscation of passports of foreign workers, (iii) unsuitable working hours, and other.	Labour and Working Conditions Management Plan	EPC Contractor
Biodiversity	Construction activities would disturb existing habitats (flora and fauna). In addition, other impacts could be from improper management of the site (e.g. improper conduct and housekeeping practices).	Biodiversity Management Plan	The Developer / EPC Contractor
	Construction activities could disturb existing habitats of birds breeding and/or nesting within the Project site.		

Table 2: Key Anticipated Impacts During Operation

Receptor	Anticipated Impact	E&S Document	Overall Implementation
Geology, Hydrology and Hydrogeology	Risk of soil and groundwater contamination during the various operation activities from improper waste management.	Waste Management Plan	O&M Contractor
Infrastructure and Utilities	Project could affect existing capacity of infrastructure and utilities related to water supply entailing constraints on the existing resources and users.	Water Management Plan	O&M Contractor
Community Health, Safety and Security	This could include potential Impacts from presence of security personnel relate to inappropriate management and conduct of security personnel towards the local communities.	Security Management Plan	O&M Contractor
		Stakeholder Engagement Plan	The Developer
Socio-economic	The Project is expected at a minimum to provide job opportunities for local communities as well as a social responsibility program. This could contribute to enhancing living environment for its inhabitants, elevate their standards of living, and bring social and economic prosperity. However, it is important to note that this phase will require fewer personnel hence fewer job opportunities will be available.	Stakeholder Engagement Plan	The Developer
		CSR Plan	The Developer
Occupational Health and Safety	There will be some risks to workers health and safety from the various operation and maintenance activities anticipated.	Occupational Health and Safety Plan	O&M Contractor
Worker Conditions and Rights	Inappropriate management of the workforce during the operation phase could entail several human right risks and violations by employing entities such as the O&M Contractor. This could include but not limited to (i) engaging child workers, (ii) confiscation of passports of foreign workers, (iii) unsuitable working hours, and other.	Labour and Working Conditions Management Plan	O&M Contractor
Biodiversity	Wind turbines are associated with impacts on birds from risks of collision and electrocution for both migratory soaring birds (which could pass over the site during the spring and autumn migration seasons) and resident soaring birds in the area.	ATMP	The Developer
	Improper management of operation activities could disturb/damage habitats and fauna.	Biodiversity Management Plan	The Developer / Project Operator

3.5 ESIA and Supporting Documents Information Disclosure

It is of utmost necessity to ensure that stakeholders are kept well informed about the Project throughout its life cycle, thus information will be accessible to the public, key stakeholders, and local communities through dissemination of related documents.

Information about the Project is made accessible to stakeholders and the broad public through a disclosure package that includes the following key documents, available publicly in Arabic and English language.

- Non-Technical Summary (NTS)
- Stakeholder Engagement Plan (SEP)
- Environmental and Social Impact Assessment (ESIA) including OHTL assessment
- Critical Habitat Assessment (CHA)
- Environmental and Social Management System (ESMS) Manual
- Biodiversity Management Plan (BMP)
- Flood Study
- Bat Addendum Report
- Environmental and Social Action Plan (ESAP)
- Scope of work: Project Strategic Environmental and Social Assessment and Cumulative Impact Assessment. *Note: the study itself will be undertaken throughout the disclosure period*
- Cumulative Effect Assessment (CEA)
- Biodiversity Action Plan (BAP)
- Bird Migration Study for Suez Wind Energy ACWA Power BOO Wind Power Plant 1.1 GW during Spring and Autumn seasons, 2022
- Spring Bird Migration Study Suez Wind Energy BOO Wind Power Plant 1.1. GW – SWE Plots 1 & 2, 2023
- Autumn Bird Migration Study Suez Wind Energy BOO Wind Power Plant 1.1. GW – SWE Plots 1 & 2, 2023

The above documents are available at the following avenues:

- Developer Website ***www.acwapower.com***. The documentation above will remain at the website for the life of the project.
- Hard copies available at

  Red Sea Governorate

  October 6, Hurghada,
  Red Sea Governorate, Egypt
  Tel: 065354627/06535546337

  Ras Ghareb Local Governmental Unit

  Location: Al-Mina Street City: 11432
  Ras Ghareb – Red Sea
  Tel: 01001318480 – 0120195877

- Soft copies can also be made available to stakeholders via email to: ***arizk@acwapower.com***

4 LEGAL AND POLICY FRAMEWORK

The ESMS has been prepared taking into account all environmental, health, safety, and social legislations that are applicable in Egypt and for the Project – to include laws, regulations, instructions, and standards as issued by the various applicable governmental entities.

In addition, the Project is seeking financing from International Financing Institutions (IFI). Therefore, the E&S Manual has also been prepared taking into account Good International Industry Practice (GIIP) requirements, in particular IFC Performance Standards, EBRD Performance Requirements and applicable WBG EHS Guidelines.

National Legislations

The table below identifies the relevant legal requirements that must be taken into account as part of the associated management plans identified in Section 3.3 earlier.

Table 3: National E&S Legislations

Attribute	Key Legislations	Reference Document
Water Resources	▪ Ministry of Health and Population Decree 458/2007 ▪ Environmental Law 4/1994 and its Amendments Law 9/2009 ▪ Law 12/1984 for irrigation and its amended executive regulations	Water Management Plan
Waste Management	▪ Environmental Law 4/1994 and its Amendments Law 9/2009 ▪ Executive Regulation 1095/2011 – modified by 710/2012 and by 964/2015 ▪ Wastewater Disposal Law 93/1962 and associated Ministerial Decree 44/2000 ▪ Law 202/2020 on waste management and its executive regulation 722/2022.	Waste Management Plan
Air Quality and Noise	▪ Environmental Law 4/1994 and its Amendments Law 9/2009 ▪ Executive Regulation 1095/2011 – modified by 710/2012 and by 964/2015	Air Quality and Noise Management Plan
Traffic and Transport	▪ Traffic Law 66/1973 and its Amendments Law 121/2008 ▪ Public Roads Law 84/1968 ▪ Public Roads Works Law 140/1956	Traffic and Transport Management Plan
Worker Accommodation / Labour and Working Conditions	▪ Minister of Labour Decree No. 200/2003 and Decree 458/2007 ▪ Minister of Labour Decree 153/2003 ▪ Ministry of Manpower's Ministerial Decree 200/2003 on accommodation and meal requirements for projects in non-urbanized areas ▪ Decree No. 162 of 2019 on informal workers (especially during construction) ▪ Social Insurance Law No. 148 of 2019 ▪ Law on Trade Union Organizations No. 123 of 2017, as amended in 2019 ▪ Law on the Protection of Freedom of Association No. 213 of 2017, as amended by Law No. 142 of 2019 ▪ Child Act 12 of 1996, amended by Act 126 of 2008	Worker Influx and Accommodation Plan / Labor and Working Conditions Management Plan
Occupational Health and Safety	▪ Environmental Law 4/1994 and its Amendments Law 9/2009 ▪ Labour and Workforce Safety Law 12/2003 ▪ Minister of Labour Decree 200/2003 and Decree 458/2007 ▪ Decree No. 126/2003 on notification of work-related accidents, injuries, fatalities and diseases; ▪ Decree No. 211/2003 on health and safety in the workplace, including construction sites, work at height, electrical safety; ▪ Decree No. 134/2003 on health and safety committees and training; ▪ Decree No.153 of 2003 concerning medical examination of workers before their employment;	Occupational Health and Safety Plan
Emergency Preparedness	▪ Environmental Law 4/1994 and its Amendments Law 9/2009 ▪ Ministerial Decree 211/2003 ▪ Egyptian Code for fire safety	ergency Preparedness and Response Plan
Security Arrangement	▪ Security Companies for Facilities Law 68/2015 amended by law 126/2015	urity Management Plan

Archaeology and Cultural Heritage	▪ Archaeology Protection Law 117/1983 and its Amendments Law 3/2010	ance Find Procedure
Worker Grievances	▪ Ministry of Labour Decree 185/2003	rker Grievance Mechanism
Biodiversity	▪ Environmental Law No. 4 of the Year 1994 and its Amendments Law No. 9 of the year 2009. ▪ Environmental Impact Assessment Guidelines and Monitoring Protocols for Wind Energy Development Projects along the Rift Valley/Red Sea Flyway with a particular reference to wind energy in support of the conservation of Migratory Soaring Birds (MSB)	Active Turbine Management Program

European Bank for Reconstruction and Development (EBRD)

The EBRD is committed to promoting European Union (EU) environmental standards as well as the European Principles for the Environment, to which it is a signatory, and which are also reflected in the Performance Requirements (PR) summarized below. EBRD expects clients to assess and manage the environmental and social issues associated with their projects so that projects meet the PRs. The relevant PRs in relation to the Project are summarized below.

- PR 1 Assessment and Management of Environmental and Social Risks and Impacts
- PR 2: Labour and Working conditions
- PR 3: Resource efficiency and pollution prevention and control
- PR 4: Health, Safety and Security
- PR 5: Land Acquisition, restrictions on land use, and involuntary resettlement
- PR 6: Biodiversity conservation and sustainability management of living natural resources
- PR 7: Indigenous People (not applicable in Egypt and therefore this Project).
- PR 8: Cultural heritage
- PR 9: Financial Intermediaries (not applicable for this Project).
- PR 10: Information disclosure and stakeholder engagement

International Finance Corporation (IFC)

The IFC of the World Bank provides a range of guidance documents related to the assessment and management of environmental and social issues in project development. Not only does IFC guidance provide a generally accepted basis for good practice, but it also provides the technical cornerstone for the Equator Principles which set out the environmental and social requirements of banks for project finance. The IFC requirements have become the *de facto* international environmental and social performance benchmark for project financing.

The IFC Performance Standards on Social and Environmental Sustainability set out a framework for managing and improving project performance from planning and assessment, through construction and operations to closure. The Performance Standards include the following:

- PS1: Assessment and Management of Environmental and Social Risks and Impacts
- PS2: Labour and Working Conditions
- PS 3: Resource Efficiency and Pollution Prevention
- PS 4: Community Health, Safety and Security
- PS 5: Land Acquisition and Involuntary Resettlement
- PS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

- PS 7: Indigenous Peoples (not applicable for this Project).
- PS 8: Cultural Heritage

In addition, there are also General EHS Guidelines document that are produced by World Bank Group (WBG) and which are considered applicable for the IFC. Such EHS guidance document provides detailed management and technical recommendations with regards to GIIP. In addition, there are also sector-specific EHS guideline document for Wind Energy produced. This EHS guidance document provides detailed management and technical recommendations with regards to Industry Best Practice.

There are also other documents considered applicable to the project such as the IFC/EBRD/KFW's "Post-construction Bird and Bat Fatality Monitoring for Onshore Wind Energy Facilities in Emerging Market Countries" (September, 2023).

The above should also be considered as part of the associated management plans identified in Section 3.3 earlier.

African Development Bank (AFDB)

AFDB have a set pf Environmental and Social Operational Safeguard (OS) under their Integrated Safeguard System (2023). This includes the following:

- OS 1: Assessment and Management of E&S Risk and Impact
- OS 2: Labor and Working Conditions
- OS 3: Resource Efficiency and Pollution Prevention and Management
- OS 4: Community Health, Safety and Security
- OS 5: Land Acquisition, Restrictions on Access to Land and Land Use, and Involuntary Resettlement
- OS 6: Habitat and Biodiversity Conservation, and Sustainable Management of living Natural Resources
- OS 7: Vulnerable Groups
- OS 8: Cultural Heritage
- OS 9: Financial Intermediaries
- OS 10: Stakeholder Engagement and Information Disclosure

5 MANAGEMENT PLAN FRAMEWORK

As discussed previously in "Chapter 3", the EPC Contractor and O&M Contractor are required to prepare several environmental and social management plans to be submitted to the Developer for approval before commencement of any construction or O&M work.

This Chapter provides additional details on the overall framework required for the management plan to be considered as applicable.

<table>
<tr><td colspan="2"><u>Water Management Plan</u></td></tr>
<tr><td>Objective</td><td>Identification of procedures for onsite management of water supplies and minimization of water consumption.</td></tr>
<tr><td>Responsibility</td><td>EPC Contractor and their subcontractors (construction phase)
O&M Contractor and its subcontractors (operation phase)</td></tr>
<tr><td>Spatial applicability</td><td>The Developer's Project site</td></tr>
<tr><td>Guiding legislations and reference</td><td>▪ Local legislations:
- Ministry of Health and Population Decree 458/2007
- Environmental Law 4/1994 and its Amendments Law 9/2009
- Law 12/1984 for irrigation and its amended executive regulations
▪ Lender requirements:
- EBRD PR 3, IFC PS 3, WBG EHS General Guidelines / EHS Guidelines for Wind Energy</td></tr>
<tr><td>Required action/planning</td><td>▪ Identification of sources of water supply that will be utilized for the Project, to include both potable and non-potable water requirements
▪ Estimation of anticipated quantities of potable and non-potable water requirements
▪ Identify in detail procedures for onsite management of water supplies and minimization of water consumption. This could include but not limited to: (i) identify location of all water storage tanks onsite with clear markings as potable/non-potable; (ii) ensure water tanks are completely closed at all times with appropriate protection against sunlight; (iii) inspections for potable and non-potable tanks and connections to ensure there are no leaks; (iv) install water saving fittings (taps, urinals, etc.) in toilets of site offices, and other as applicable.
▪ Reflect the procedural actions for water management in: (i) induction training material for workers; and (ii) repeated/refresher Toolbox Talks (TBT)
▪ Identify Key Performance Indicators (KPI) for implementation of plan
▪ Identify roles and responsibilities for implementation of plan</td></tr>
<tr><td>Monitoring requirements</td><td>▪ Monitoring program shall be at a minimum based on the following schedule
<table>
<tr><td>Parameters</td><td>As per parameters included in Decree 458/2007</td></tr>
<tr><td>Location</td><td>Potable water tanks (if applicable)</td></tr>
<tr><td>Frequency</td><td>Quarterly</td></tr>
<tr><td>Duration</td><td>1 sample</td></tr>
<tr><td>Prerequisite</td><td>Discuss with EEAA and agree on details of this program</td></tr>
<tr><td>Review</td><td>As applicable based on project updates and as required by related parties (regulator, developer, lender, etc.)</td></tr>
</table>
▪ Continuous inspection and reporting by EHS staff</td></tr>
<tr><td>Reporting Requirements</td><td>▪ Monthly water consumption report to the Developer</td></tr>
<tr><td>Example for some KPIs</td><td>▪ m^3 of potable water consumed
▪ m^3 of unpotable water consumed</td></tr>
<tr><td colspan="2"><u>Waste Management Plan</u></td></tr>
<tr><td>Objective</td><td>Identification of procedures for onsite management and final disposal of generated waste to include solid waste (municipal and construction), wastewater and hazardous waste.</td></tr>
<tr><td>Responsibility</td><td>EPC Contractor and their subcontractors (construction phase)
O&M Contractor and its subcontractors (operation phase)</td></tr>
<tr><td>Spatial applicability</td><td>The Developer's Project site</td></tr>
</table>

Guiding legislations and reference	▪ Local legislations: - Environmental Law 4/1994 and its Amendments Law 9/2009 - Executive Regulation 1095/2011 – modified by 710/2012 and by 964/2015 - Wastewater Disposal Law 93/1962 and associated Ministerial Decree 44/2000 ▪ Lender requirements: - EBRD PR 3, IFC PS 3, WBG EHS General Guidelines
Required action/planning	▪ Inclusion of a waste inventory which identifies the source and anticipated quantities of each waste stream; ▪ Identify final disposal location of each waste streams (solid waste (municipal and construction), wastewater and hazardous waste). In addition, confirm that disposal locations identified are well managed and have sufficient capacity to receive amounts generated from project without affecting other projects and users. This will include undertaking an audit prior to using the facilities to ensure they are operated according to Good International Industry Practice (GIIP) and submission of an audit report accordingly. ▪ Identify measures to ensure conformity with waste hierarchy principles. ▪ Identify in detail the waste management procedures to be implemented to manage impacts. This could include but not limited to: (i) contract arrangement with official entity responsible for collection and final disposal of waste streams; (ii) specifications of waste containers, bins and collection areas to be utilized for onsite disposal; (iii) utilization of waste manifests by contractors; (iv) identification and consideration of recycling and reuse measures for waste streams; (v) prohibition of fly-dumping of waste streams to the land, and other. ▪ Reflect the procedural actions for waste management in: (i) induction training material for workers; and (ii) repeated/refresher Toolbox Talks (TBT) ▪ Identify Key Performance Indicators (KPI) for implementation of plan ▪ Identify roles and responsibilities for implementation of plan
Monitoring requirements	▪ Continuous inspection and reporting by EHS staff
Reporting Requirement	▪ Monthly waste generation report supported with waste manifests to the Developer
Example for some KPIs	▪ m^3 of recyclable waste generated ▪ % of waste recycled (offsite) ▪ % of waste reused onsite ▪ m^3 of non-recyclable waste generated ▪ m^3 of hazardous waste generated ▪ m^3 of wastewater generated ▪ m^3 of wastewater reused ▪ % of waste disposed offsite (landfill, WWTP, hazardous waste facility)

Air Quality and Noise Management Plan	
Objective	Identification of procedures to ensure that air pollutant and noise sources are properly managed and controlled onsite.
Responsibility	EPC Contractor and their subcontractors
Spatial applicability	The Developer's Project site
Guiding legislations and reference	▪ Local legislations: - Environmental Law 4/1994 and its Amendments Law 9/2009 - Executive Regulation 1095/2011 – modified by 710/2012 and by 964/2015 ▪ Lender requirements: - EBRD PR 3, IFC PS 3, WBG EHS General Guidelines / EHS Guidelines for Wind Energy
Required action/planning	▪ Identify sources of air quality pollutants and noise ▪ Identify in detail the air quality and noise management procedures to be implemented which could include but not limited to: (i) equipping workers with proper Personal Protective Equipment related to dust and noise control (e.g. masks, eye goggles, breathing masks, ear muffs, etc.); (ii) regular watering of construction active areas (e.g. containment, covering, bundling); (iii) proper management of stockpiles and excavated material, (iv) adhering to a 25 km/h speed limit onsite; (v) proper covering of trucks transporting aggregates and fine materials and other.

<table>
<tr><td></td><td>▪ Reflect the procedural actions for air quality and noise management in: (i) induction training material for workers; and (ii) repeated/refresher Toolbox Talks (TBT)
▪ Identify Key Performance Indicators (KPI) for implementation of plan
▪ Identify roles and responsibilities for implementation of plan</td></tr>
<tr><td>Monitoring requirements</td><td>▪ Monitoring programme shall be at a minimum based on the following schedule
<table>
<tr><td>Parameters</td><td>Total Suspended Particulate, PM10 and Noise</td></tr>
<tr><td>Location</td><td>2 locations (upwind and downwind)</td></tr>
<tr><td>Frequency</td><td>Quarterly</td></tr>
<tr><td>Duration</td><td>24 hours per point</td></tr>
<tr><td>Reporting</td><td>Quarterly report</td></tr>
<tr><td>Prerequisite</td><td>Discuss with EEAA and agree on details of this program</td></tr>
<tr><td>Review</td><td>As applicable based on project updates and as required for related parties (regulator, developer, lender, etc.)</td></tr>
</table>
▪ Continuous Inspection and reporting by health and safety staff</td></tr>
<tr><td>Reporting Requirements</td><td>▪ Quarterly air quality and noise monitoring report to the Developer</td></tr>
<tr><td>Example for some KPIs</td><td>▪ Number of air quality and noise monitoring programs undertaken</td></tr>
</table>

Traffic and Transport Management Plan	
Objective	Promotion of safe driving and vehicle management practices both onsite and offsite to protect workers and members of the public
Responsibility	EPC Contractor and their subcontractors (construction phase)
Spatial applicability	The Developer's Project site
Guiding legislations and reference	▪ Local legislations: - Traffic Law 66/1973 and its Amendments Law 121/2008 - Public Roads Law 84/1968 - Public Roads Works Law 140/1956 ▪ Lender requirements: - EBRD PR 4, IFC PS 4, WBG EHS General Guidelines / EHS Guidelines for Wind Energy
Required action/planning	▪ Identification of project traffic requirements related to wind turbines, equipment/machinery/materials, project workers and other based on a monthly basis ▪ Inclusion of a transport plan in specific for the wind turbines that studies the entire route of transportation ▪ Identification of types of vehicles to be utilized ▪ Identify in detail procedures for onsite management of traffic. This could include but not limited to: (i) optimization of internal traffic layout so that delivery and other vehicles will be able to access site easily; (ii) identification of requirements for controlling access to the site (e.g. security checkpoint, registration, etc.); (iii) providing appropriate lighting for roads and pedestrian walk and ensure they are segregated; (iv) utilization of appropriate and sufficient traffic signs onsite (e.g. speed limits); (v) barricading of open trenches and excavated pits; (vi) utilization of banksmen and flaggers and other. ▪ Identify requirements to be adhered to and enforced on all haulage suppliers ▪ Identification of a code of conduct to be adhered to and enforced on all drivers in the Project ▪ Identification of speed limits onsite and identification of all traffic signage requirement onsite ▪ Identification of a procedure for management of onsite/offsite traffic accidents ▪ Reflect the procedural actions for traffic management in: (i) induction training material; and (ii) repeated/refresher Toolbox Talks (TBT) ▪ Identify Key Performance Indicators (KPI) for implementation of plan ▪ Identify roles and responsibilities for implementation of plan
Monitoring requirements	▪ Continuous inspection and reporting by EHS staff
Reporting Requirements	▪ Monthly update report on implementation of required action/planning requirements to the Developer
Example for some KPIs	▪ Number of traffic related accidents onsite and offsite ▪ Number vehicle inspections ▪ % of drivers specific training

Worker Influx and Accommodation Plan	
Objective	Define minimum health and safety standards and principles for worker accommodation and ensure impacts on community health and safety from worker influx are managed and controlled.
Responsibility	EPC Contractor and their subcontractors (construction phase)
Spatial applicability	Offsite (Ras Gharib city)
Guiding legislations and reference	▪ Local legislations: - Minister of Labour Decree No. 200/2003 - Minister of Labour Decree 153/2003 ▪ Lender requirements: - EBRD PR 2, IFC PS 2, WBG EHS General Guidelines / EHS Guidelines for Wind Energy - IFC's and EBRD's Worker Accommodation Guidance Note
Required action/planning	▪ Identification of the number of workers expected per month and anticipated accommodation requirements of all involved subcontractors ▪ Identification of accommodation facilities in Ras Gharib city (availability of hotels, suites, apartments, and other) ▪ Assessment of worker influx to Ras Gharib city at a cumulative level taking into account other developments in the Project area with parallel and/or overlapping construction schedule and which require accommodation (e.g. other wind farm developments) to include pressure on infrastructure, services and utilities ▪ Identify in detail procedures for accommodation to include but not limited to: (i) number of beds per person; (ii) maximum occupants per room; (iii) separate rooms for male/female occupants; (iii) requirements for en-suite bathroom/toilet, ventilation, designated eating areas, waste facilities; (iv) ensuring high degree of safety and security, including information on evacuation procedures and other. ▪ Identification in detail of a medical examination program for all workers ▪ Identification of awareness raising material for communicable diseases ▪ Regular stakeholder engagement by CLO with local community regarding potential influx of workers from other regions ▪ Identification of a Labour Code of Conduct as well as Accommodation Rules and Regulations ▪ Reflect the procedural actions for worker accommodation management in: (i) induction training material; and (ii) repeated/refresher Toolbox Talks (TBT) ▪ Identify Key Performance Indicators (KPI) for implementation of plan ▪ Identify roles and responsibilities for implementation of plan
Monitoring requirements	▪ Continuous inspection and reporting by EHS staff
Reporting Requirements	▪ Monthly update report on implementation of required action/planning requirements to the Developer
Example for some KPIs	▪ Number of inspections undertaken on worker accommodation units

Occupational Health and Safety Plan	
Objective	Establish procedures that describe the manner in which activities will be carried out to protect and promote workers health and safety and safeguarding of personnel and property
Responsibility	EPC Contractor and their subcontractors (construction phase) O&M Contractor and its subcontractors (operation phase)
Spatial applicability	The Developer's Project site
Guiding legislations and reference	▪ Local legislations: - Environmental Law 4/1994 and its Amendments Law 9/2009 - Labour and Workforce Safety Law 12/2003 - Minister of Labour Decree 200/2003 and Decree 458/2007 - Decree No. 126/2003 on notification of work-related accidents, injuries, fatalities and diseases; - Decree No. 211/2003 on health and safety in the workplace, including construction sites, work at height, electrical safety; - Decree No. 134/2003 on health and safety committees and training; - Decree No.153 of 2003 concerning medical examination of workers before their employment;

	▪ Lender requirements: - EBRD PR 2, IFC PS 2, WBG EHS General Guidelines / EHS Guidelines for Wind Energy
Required action/planning	▪ Inclusion of a Job Safety Analysis (JSA) and Risk and Hazard Assessment for work activities ▪ Identification of a Permit to Work System requirements and procedure ▪ Identification of a Lock Out-Tag Out System requirements and procedures ▪ Identification of Confined Space requirements and procedure ▪ Identification of occupational health and safety signage requirements to be implemented ▪ Identification of medical support requirements ▪ Identify in detail the occupational health and safety management procedures to be implemented for each work activity to include personnel protective equipment requirements; management measures, and other as applicable ▪ Identification of rest and sanitary facilities ▪ Identification of specific actions and procedures related to COVID-19 (social distancing requirements, test requirements, and other as appliable). ▪ Identification of specialized technical training requirements as related to this plan and activities to be undertaken (e.g. training for working at height, electrical works, etc.) ▪ Reflect the procedural actions for occupational health and safety in: (i) induction training material for workers; and (ii) repeated/refresher Toolbox Talks (TBT) ▪ Identify Key Performance Indicators (KPI) for implementation of plan ▪ Identify roles and responsibilities for implementation of plan
Monitoring requirements	▪ Continuous inspection and reporting by EHS staff
Reporting Requirements	▪ Monthly update report on implementation of required action/planning requirements to the Developer
Example for some KPIs	▪ Total number of OHS incidents ▪ Number of OHS near misses ▪ Number of worked hours ▪ Lost working hours ▪ Number of Lost time Injuries ▪ Number of Lost Time Injury Frequency Rate (LTIFR) ▪ Total Recordable Frequency Rate (TRFR)

Emergency Preparedness and Response Plan	
Objective	Establish a series of organizational, operational and preventive measures in the event of an emergency that are adapted to the circumstance of such situations, which in turn will ensure the safety of workers and property within the specific project site
Responsibility	EPC Contractor and their subcontractors (construction phase) O&M Contractor and its subcontractors (operation phase)
Spatial applicability	The Developer's Project site
Guiding legislations and reference	▪ Local legislations: - Environmental Law 4/1994 and its Amendments Law 9/2009 - Ministerial Decree 211/2003 - Egyptian Code for fire safety ▪ Lender requirements: - EBRD PR 4, IFC PS 2 and 4, WBG EHS General Guidelines / EHS Guidelines for Wind Energy
Required action/planning	▪ Inclusion of requirements for an emergency responder team that includes at a minimum first aiders and firefighters that receive appropriate and certified training ▪ Inclusion of requirements to undertake emergency drills in coordination with external emergency response services if required (e.g. civil defence, nearest hospital, etc.) ▪ Identify in detail of emergency procedures to be implemented to include first actions, alerting emergency contacts, site evacuation, communicating with external emergency services ▪ Identification in details of emergency control measures to include but not limited to fire, personnel accidents, spillage, sandstorms, heats strokes, and other. ▪ Identification of location of assembly points onsite ▪ Identification of emergency signs to be implemented onsite

	▪ Reflect the procedural actions for emergency preparedness and response in: (i) induction training material for workers; and (ii) repeated/refresher Toolbox Talks (TBT) ▪ Identify Key Performance Indicators (KPI) for implementation of plan ▪ Identify roles and responsibilities for implementation of plan to include establishment of an emergency committee and assigning roles to an emergency manager
Monitoring requirements	▪ Continuous inspection and reporting by EHS staff
Reporting Requirements	▪ Emergency Report (upon occurrence)
Example for some KPIs	▪ Number of emergency drills conducted ▪ Number of emergency incidents triggered

Security Management Plan	
Objective	Identification of procedures for the overall management of security and asset-protection of the project site with specific regard for human rights.
Responsibility	EPC Contractor and their subcontractors (construction phase) O&M Contractor and their subcontractors (operation phase)
Spatial applicability	The Developer's Project site
Guiding legislations and reference	▪ Local legislations: - Security Companies for Facilities Law 68/2015 amended by law 126/2015 ▪ Lender requirements: - EBRD PR 4, IFC PS 4, WBG EHS General Guidelines - The Voluntary Principles on Security and Human Rights
Required action/planning	▪ Identification in detail of site security arrangements that will be implemented onsite to include security guards, fencing, CCTV, and other equipment as applicable such as security caravans/huts, booms. ▪ Identification of security operating procedures to include: (i) control of site access, and (ii) security force management to include security roles, provision and composition of security force, equipment requirement of security force, use of force, ▪ Identification of incident response procedure ▪ Development of a code of conduct and use of force policy ▪ Reflect the procedural actions for security management in: (i) induction training material; and (ii) repeated/refresher Toolbox Talks (TBT) ▪ Include specialized training to security personnel to avoid use of excessive force ▪ Identify Key Performance Indicators (KPI) for implementation of plan ▪ Identify roles and responsibilities for implementation of plan
Monitoring requirements	▪ Continuous inspection and reporting by EHS staff
Reporting Requirements	▪ Monthly update report on implementation of required action/planning requirements to the Developer
Example of some KPIs	▪ % of security guard receiving training ▪ Number of security incidents triggered

Chance Find Procedure	
Objective	Establish a procedure to avoid or reduce adverse effects to undiscovered archaeological remains during the construction phase of the Project
Responsibility	EPC Contractor and their subcontractors (construction phase)
Spatial applicability	The Developer's Project site
Guiding legislations and reference	▪ Local legislations: - Archaeology Protection Law 117/1983 and its Amendments Law 3/2010 ▪ Lender requirements: - EBRD PR 8, IFC PS 8, WBG EHS General Guidelines
Required action/planning	▪ Identification of procedures to be implemented to include onsite notification measures, onsite management measures (e.g. delineation and marking of site, etc.), communication with relevant authority, etc.

	▪ Reflect the procedural actions for chance find in: (i) induction training material for workers; and (ii) repeated/refresher Toolbox Talks (TBT) ▪ Identify Key Performance Indicators (KPI) for implementation of plan ▪ Identify roles and responsibilities for implementation of plan
Monitoring requirements	▪ Continuous inspection and reporting by EHS staff
Reporting	▪ Chance find report (upon occurrence)
Example of some KPIs	▪ Number of chance finds triggered

Worker Grievance Mechanism	
Objective	A robust and comprehensive procedure to capture, document, resolve and close out any worker complaint, whether classified as grievances or not.
Responsibility	EPC Contractor and their subcontractors (construction phase) O&M Contractor (operation phase)
Spatial applicability	The Developer's Project site
Guiding legislations and reference	▪ Local legislations: - Ministry of Labour Decree 185/2003 ▪ Lender requirements: - EBRD PR 2, IFC PS 2, WBG EHS General Guidelines
Required action/planning	▪ Identification of a step-by-step process and guideline to ensure that every complaint/grievance made by workers are registered, documented and fully addressed ▪ The overall outline/structure of the grievance mechanism will be as follows: - Workers will be allowed to lodge grievances through various platforms and channels to include grievance boxes distributed onsite, telephone, face to face meetings with responsible personnel, workers representatives and unions. Contact details for all such channels will be identified and provided in detail. - Anonymous lodging of grievances will be allowed. - All grievances will be recorded and a case handler will be assigned and whom will be determined at a later stage. - All grievances will be handled in the shortest possible period. The first approach will be to inform the worker within the first 24 hours after receiving the grievance. The worker will be informed within 7 working days on whether or not the grievance proceeds and what the next steps will be. - Once a resolution has been agreed or a decision made, the case handler will monitor the implementation of the response. - After the implementation of an agreed resolution has been verified the grievance close-out will take place. It will entail reaching a unanimous agreement, clearly communicated to avoid misunderstandings. - A close-out report will be prepared with evidence to support closure (e.g. photos). ▪ Reflect the procedural actions for worker grievance mechanism in: (i) induction training material for workers; and (ii) repeated/refresher Toolbox Talks (TBT) ▪ Identify Key Performance Indicators (KPI) for implementation of plan ▪ Identify roles and responsibilities for implementation of plan
Reporting Requirements	▪ Monthly update summary report on worker grievances and resolutions
Example of some KPIs	▪ Number of worker grievances submitted ▪ Outstanding grievances ▪ Number of grievances not processed on time

Labor and Working Conditions Management Plan	
Objective	Identification of procedures for onsite management of labor force and the required working conditions onsite.
Responsibility	EPC Contractor and their subcontractors (construction phase) O&M Contractor and its subcontractors (operation phase)
Spatial applicability	The Developer's Project site

Guiding legislations and reference	▪ Local legislations: - Minister of Labour Decree No. 200/2003 and Decree 458/2007 - Minister of Labour Decree 153/2003Lender requirements: ▪ EBRD PR 2, IFC PS 2, WBG EHS General Guidelines / EHS Guidelines for Wind Energy, OS 2: Labor and Working Conditions
Required action/planning	▪ Provides the policies applicable to this plan to include but not limited to an HR policy ▪ Identifies a recruitment procedure to be implemented for the workforce ▪ Identifies a Human Resources (HR) Management Procedure for the workforce that will ensure decent and humane working conditions, worker rights, and enhance constructive work floor relations ▪ Identify workforce retrenchment procedures ▪ Identifies a disciplinary procedure for the workforce to be implemented ▪ Identifies a worker welfare procedure related to drinking water, rest areas, sanitary facilities, changing rooms and other ▪ Identify training requirements related to the plan ▪ Identify Key Performance Indicators (KPI) for implementation of plan ▪ Identify roles and responsibilities related to the plan
Reporting Requirements	▪ Monthly report to the Developer
Example of Some KPIS	▪ Number of workers employed (disaggregated by sex) ▪ Number of new workers appointed ▪ Number of workers leaving the project ▪ Total number of working hours / Total overtime ▪ % of workers receiving salary payment on time ▪ % of workforce with written contract
This plan should be consistent with the requirements included in Chapter 6 below.	

6 FRAMEWORK FOR LABOR MANAGEMENT

6.1 Human Resources (HR) Policy

The Developer is committed to treating its employees and service providers fairly, equally and without prejudice. This means respecting all individuals, regardless of ethnic origin, creed, age or gender. To achieve this goal, the company is committed to the following:

1. Operating in strict compliance with all applicable national and local laws and regulations including to those related to labour, employment, and workplace safety;
2. Meeting internationally-accepted industry best practice requirements of the relevant International Financing Institutions (IFIs) to include in specific the IFC Performance Standards and EBRD Performance Requirements
3. Providing safe work places and fair terms and conditions of employment;
4. Being an equal opportunities employer, with no preference on the basis of personal characteristics such as age, race, nationality, ethnicity, sexual orientation, gender or religion;
5. Positively encouraging the development of all our employees by providing a working environment that fosters new talent and ways of thinking;
6. Offering competitive terms and conditions of employment in accordance with applicable national and local laws and promoting the development and best use of individual talents;
7. Ensuring that all employees and contractors work in safe conditions where suitable procedures are provided and maintained;
8. Ensuring that all employees and subcontractors have ready access to sanitation facilities, potable water, food and/or food preparation, storage and eating facilities, and suitable accommodation and welfare facilities;
9. Never using underage or child labour and never employing those under the age of 18;
10. Never using any forced or compulsory labour;
11. Not tolerating discrimination, harassment, or hostile and offensive work environment;
12. All employees have the right to freely join trade unions, where such rights are recognized by law;
13. Accepting, offering, or soliciting any bribe or kickback no matter how large or small is considered strictly prohibited; and
14. Ensuring that the company and all involved subcontractors are made aware of this Policy.

the Developer will monitor and review this Policy on a regular basis to ensure that it continues to support and encourage a high standard of human resources performance.

6.2 Labour Management

The Developer is committed to adhering to the below principles and requirements on labor, employment and workplace safety. Such requirements should also be implemented and taken into account by all involved entities in the Project to include EPC Contractor, O&M Contractor and all involved subcontractor to these entities.

Local and International Requirements

- The Developer will operate in strict compliance with all applicable national and local laws and regulations related to labour, employment, and workplace safety.
- The Developer will meet all internationally-accepted industry best practices requirements of the relevant International Financing Institutions (IFIs) related to labour, employment and workplace safety to include in particular "IFC Performance Standard 2: Labour and Working Conditions" and EBRD Performance Requirement 2: Labour and Working Conditions".

Working Conditions

- All workers will be provided with a contract which will include details on: (i) nature, type of work and job responsibilities; (ii) wage and time of payment; (iii) compulsory payments such as medical, life and social insurance and other benefits to include in cash and in kind as agreed; (iv) contract duration; (vii) other information as may be required. In addition, where workers are illiterate, these contracts will be explained verbally before signature.
- Wages will be fair (i.e. that meets basic needs to maintain a safe, decent standard of living) and based on qualifications and competencies, professional experiences, allocated roles and job responsibilities, wages at equivalent positions, and other factors as appropriate. Such criteria will be applied to all workers to include migrant workers and women in specific. In any case, the determined wage shall not be less than the minimum wage in accordance with local laws and regulations.
- All wages will be paid on time and directly to the worker as set in the contract terms.
- All workers will be entitled to leaves (to include annual leaves, sick leaves, maternity leaves, bereavement leave) in accordance with local labour laws and legislations.
- All workers should be required to work in accordance with working hours set within local labour laws and legislations taking into account rest or break hours. In addition, working extra hours beyond those specific above is allowed (with the consent of the worker), however in this case the employee will be entitled for overtime hours as agreed in the contract.

Foreign Workers

- Engagement of foreign workers will adhere to requirements identified through this section to include specifically contract, wages, leaves, working hours, non-discrimination and equal opportunity, child labour, young workers, forced labour, etc.
- Confiscation of personal documents of the foreign workers by their employers is strictly forbidden.
- No fees, commissions or deductions from salary should be asked from foreign workers upon promise of employment at the Project.

Casual and Day Workers

- Engagement of casual and day workers will adhere to requirements identified through this section to include specifically contract, wages, leaves, working hours, non-discrimination and equal opportunity, child labour, young workers, forced labour, etc.
- In specific, it will be ensured that all casual and day workers are covered by social, life and medical insurance as appropriate and they will be informed on this as part of recruitment process through inclusion in contracts and verbal explanation.

Non-Discrimination and Equal Opportunity

- The Developer is committed to being an equal opportunity employer and will not practice any discrimination based on personal characteristics – this includes gender, race, nationality, ethnic, social and indigenous origin, religion or belief, disability, age, or sexual orientation. In addition, the Developer has no tolerance for harassment, intimidation, exploitation or hostile and offensive work environment.

- The above will apply to the entire work cycle to include: recruitment and hiring, compensation (wages and benefits), working conditions and terms of employment, assignment of jobs, termination of employment, and disciplinary actions.

Child Labor

A child is considered any person less than 18 years of age. The Developer is committed to never using child labour the project development, including in its supply chains

Forced Labor

- The Developer is committed to never using any forced or compulsory labour including in its supply chains. Forced labour is any work or service not voluntarily performed that is exacted from an individual under threat of force or penalty.

Workers Organization

- The Developer recognizes workers' rights to form and to join workers' organizations of their choosing without interference and to bargain collectively.
- The Developer is committed to allowing all employees to form or join workers' organization without interference and to bargain collectively in compliance with Egyptian laws.

Health and Safety

- The Developer is committed to providing a safe work place that ensures all employees and contractors work in safe conditions where suitable procedures are provided and maintained.
- The Developer is committed to ensuring all employees and subcontractors have ready access to sanitation facilities, potable water, food and/or food preparation, storage and eating facilities, and suitable accommodation and welfare facilities.

Worker Grievance Mechanism

- All works must have access to an effective grievance mechanism that is easily accessible to raise any workplace concerns. The mechanism must address concerns promptly, using an understandable and transparent process that provides timely feedback, without any retribution.

7 E&S MEETINGS, TRAINING, INSPECTION AND MONITORING REQUIREMENTS

This section identifies the overall requirements that will be implemented for E&S meetings, training, inspection and monitoring during the construction and operation phase.

7.1 E&S Meetings

The following identifies the E&S meetings that will be undertaken for the Project throughout the construction and operation phase.

Weekly Meetings

During construction, a weekly E&S meeting must be organized by the EPC Contractor and subcontractors' E&S Manager/Officers (as applicable). EPC Contractor will notify the Developer and OE team on the time and date of meeting for relevant personnel to attend, if required. The agenda of these meetings shall cover at least the following items:

- Summary of items addressed at the previous meeting and determination whether they have been solved or not
- E&S incidents, near misses or situations at risk identified during the previous week
- Special resources needed by EPC Contractor and subcontractors for coming week, especially in terms of safety equipment and supervision
- Specific awareness communication to implement onsite
- Training needs
- Personal Protective Equipment (PPE) requirements

The weekly E&S meetings may be combined with other meetings (e.g. weekly coordination meeting) as far as the above topics are discussed and addressed and the presence of the required participants is ensured. EPC Contractor is required to maintain minutes of meeting and attendees register.

During the operation phase, no weekly E&S meetings are required.

Monthly Meetings

During construction, the monthly E&S meeting is organized by the Developer's Construction Manager and involves the following personnel (as appropriate):

- Developer E&S Manager
- Developer CLO
- OE Team as applicable
- EPC Contractor Project Manager
- EPC Contractor E&S Manager and E&S Site Supervisors
- Contractor and subcontractors E&S Managers/Officers as applicable

The agenda of these meetings shall cover at least the following items:

- Summary of the items addressed at the previous meeting and determination whether they have been solved or not
- Discussion on work assignments (if they have changed), equipment placement if it is variable, and ensure work flow is efficient and safe

- Conditions of the work place to include housekeeping, hygiene, hazards, etc.
- Overview of accident/incident trends
- E&S training program
- New and outstanding safety issues
- Audits and inspections outcomes (as applicable)
- Accidents (type, severity, frequency, etc.)

Throughout the monthly E&S meeting, minutes of meeting will be undertaken by the EPC Contractor and shall be taken and circulated after the meeting to attendants. In addition, attendees register will also be maintained.

During operation, monthly E&S meetings will be undertaken in a similar approach to the above that will involve O&M Contractor.

7.2 E&S Training

To achieve the approach to E&S management, all personnel will receive the required training. Training will not be undertaken as a one-off but instead will be continually refreshed as part of on-going site training programs focused on the training needs of construction personnel. Training will be provided for all new recruits and continual refresher courses will be established for staff to attend as needed.

The following identifies the E&S meetings that will be undertaken for the Project throughout the construction and operation phase.

Basic Visitor Safety Induction

Any visitor shall receive a basic safety induction prior to going on site. Each person who completes the induction will acknowledge by signing attendance sheet. This induction shall cover at least the following items:

- Site specific hazards awareness
- PPE instructions
- Basic safety rules to comply with
- Procedure to follow in case of emergency
- COVID-19 specific requirements

The basic visitor safety induction training for all visitors will be delivered by EPC Contractor's E&S Manager or Developer's E&S Manager (during construction) and O&M Contractor's E&S Manager or Developer's E&S Manager (during operation). In addition, event attendance data sheet shall be signed and provided.

Site Induction Training

All construction and operation staff members will attend an in-house site induction training course. This will be delivered in a specific meeting room on the Project site and in a consistent structure, irrespective of the staff designations attending. The main objective of this type of training is to provide:

- A general understanding of the E&S risks associated with the construction/operation activities proposed
- Local, national and international requirements
- Clarification of the E&S Policy and its practical implementation, stressing that it carries implications for the working methods and responsibilities for all employees

The site induction training will be delivered by the EPC Contractor's E&S Manager (during construction) and O&M Contractor E&S Manager (during operation) to all staff before they commence work on site. Workers will

not be allowed to start working onsite until they have received the site induction training. As a minimum, the induction will include but not be limited to:

- General introduction and purpose and objectives of the E&S plans
- The reason why the requirements set out in the E&S plans are important
- The requirements for due diligence and duty of care
- Key E&S contacts, roles and responsibilities
- Methods for implementing E&S controls included within the plans
- Procedure for reporting incidents
- Details of site emergency and response plan
- COVID-19 specific requirements

Signed attendance sheet shall be retained.

Emergency Response Training

A standalone Emergency Preparedness and Response Plan is required to be prepared by EPC Contractor (during construction), and O&M Contractor (during operation). The Emergency Preparedness and Response Plan should address specific requirements for emergency response training.

Regular Tool-Box Talk (TBT)

The EPC Contractor's E&S Manager (during construction) and O&M Contractor's E&S Manager (during operation) will be responsible to conduct regular Tool-Box E&S meetings with their respective crews and subcontractors' crews as applicable. Topics and frequency are developed by the E&S Manager of the EPC Contractor and distributed regularly. Signed attendance sheet shall be retained. The scope of the TBT shall be identified within each of management plans identified in "Chapter 5".

Other Training Requirements

There are other specific training requirements that must be adhered to and undertaken by the EPC Contractor's E&S Manager (during construction) and O&M Contractor's E&S Manager (during operation) and which are related to specific topics as applicable. This includes for example specific training for Occupational Health and Safety (OHS), specific training for workers handling waste, etc. Those have been identified in "Chapter5" earlier.

E&S Bulletin Board

A bulletin board will be installed at all sites where employees congregate as applicable. All other locations will have the same information available for employee's review on demand. Bulletin board information is as follows:

- Map denoting the route to the nearest emergency care facility
- Emergency communication procedures
- List of the most up-to-date E&S plans and their location
- A sign indicating the number of hours worked since last lost workday incident
- Safety and health warning posters
- Safety Alert

7.3 E&S Inspection and Monitoring

E&S inspection and monitoring will be carried out to ensure compliance with national and international best practice requirements as set out in the E&S plans as appropriate. A three-tiered approach will be applied to the monitoring of the Project performance, as follows:

- Daily Site Tours to be undertaken by EPC Contractor (during construction) and O&M Contractor (during operation)
- Weekly Site Inspection to be undertaken by EPC Contractor (during construction) and O&M Contractor (during operation)
- Audits to be undertaken by the Developer (discussed in details in "Chapter 8").

Daily Site Tours

The EPC Contractor's E&S Manager and O&M Contractor's E&S Manager will be required to undertake a daily safety inspection and monitoring at the site. He/she shall prepare a daily observation report stating therein the corrective measures on observed safety deficiencies, unsafe acts and conditions. The observations shall be communicated to the concerned partners and subcontractor for their action. Copies of the daily inspection reports shall be kept on site by the E&S Managers and provided to the Developer as required.

Weekly Site Inspections

It is the responsibility of the EPC Contractor's E&S Manager and O&M Contractor's E&S Manager to carry out weekly site inspections. These will be carried out through a weekly site inspection checklist.

The checklists will be used as the primary tool for identifying any non-compliance. The non-compliance procedure will be followed and implemented. Hard copies of the checklists will be printed and completed by the E&S Managers during the inspection of the site.

The inspections will be used to ensure that all parties (including contractor and subcontractors) are fully implementing the management procedures outlined within the E&S plans.

The information collected during the weekly site inspections will be made available to the Developer as required.

7.4 E&S Reporting and Records

Based on all of the above the table below provides a summary of all the E&S requirements discussed throughout this chapter along with the reporting and record keeping requirements. The table below identifies the requirements for the Developer, EPC Contractors and O&M Contractor.

The following reports and records will be stored and maintained onsite at all time.

Table 4: E&S Reporting and Records

No.	Developer		EPC Contractor		O&M Contractor	
	E&S Item	Report/Record	E&S Item	Report/Record	E&S Item	Report/Record
1	E&S Meetings					
1.1	Attend weekly E&S meetings	N/A	Overall management of weekly E&S meetings	Minutes of meeting	N/A	N/A
1.2	Overall management of monthly E&S meetings	N/A	Attend monthly E&S meetings	Minutes of meeting	Attend monthly E&S meetings	Minutes of meeting
2	E&S Training					
2.1	Basic Visitor Safety Induction Training for visitors	Signed attendance sheets	Basic Visitor Safety Induction Training for visitors	Signed attendance sheet	Basic Visitor Safety Induction Training for visitors	Signed attendance sheet

2.2	General Site Induction Training	Signed attendance sheets	General Site Induction Training	Signed attendance sheets	General Site Induction Training	Signed attendance sheets
2.3	Emergency Response Training	Signed attendance sheets	Emergency Response Training	Signed attendance sheets	Emergency Response Training	Signed attendance sheets
2.4	Regular Tool Box Talks	Signed attendance sheets	Regular Tool Box Talks	Signed attendance sheets	Regular Tool Box Talks	Signed attendance sheets
2.5	Other Specialized Trainings (e.g. Occupational Health and Safety)	Signed attendance sheets	Other Specialized Trainings (e.g. Occupational Health and Safety)	Signed attendance sheets	Other Specialized Trainings (e.g. Occupational Health and Safety)	Signed attendance sheets
3	**E&S Inspection and Monitoring**					
3.1	Daily observation	Daily Observation Reports	Daily observation	Daily Observation Reports	Daily observations	Daily Observation Reports
3.2	Weekly Site Inspections	Weekly site inspection checklists	Weekly Site Inspections	Weekly site inspection checklists	Weekly Site Inspections	Weekly site inspection checklists

8 AUDITING

8.1 Environment, Health and Safety (EHS) Audit

Construction Phase

During construction, the Developer will undertake an Environmental, and Social (E&S) audit. The objective will be to ensure EPC Contractor's and subcontractor's compliance with the relevant E&S requirements related to the Project, including in particular the following:

- Environmental and Social Impact Assessment (ESIA) and associated Environmental and Social Management Plan (ESMP)
- IFC 2012 Performance Standards
- EBRD Performance Requirements
- World Bank Group (WBG) General EHS Guidelines, Wind Energy EHS Guidelines
- National Egyptian EHS laws, regulations and standards

The EHS audit will be undertaken by the Developer E&S Manager on a quarterly basis. An EHS audit checklist will be prepared taking into account the following criteria:

- Overall EHS Onsite Management (documentation control, onsite team, training, meetings, inspection, monitoring, reporting, etc.)
- Hazardous material management
- Archaeology and cultural heritage (related to chance find procedures)
- Emergency preparedness and response
- Water management
- Waste management (solid waste, wastewater and hazardous waste)
- Occupational health and safety
- Traffic and transport management
- Air quality and noise

The audit will be based on: (i) site visit and inspections; (ii) EHS documentation review of EPC Contractor and subcontractors; and (iii) meeting/discussions with EPC Contractor's E&S team and subcontractor's team as applicable.

Based on the above, a quarterly E&S audit report will be prepared that will identify: (i) E&S observations and non-conformities; (ii) corrective actions require to resolve observations and non-conformities; (iii) identification of responsible entities for implementation of corrective actions; and (iv) timeline for implementation of corrective actions.

Operation Phase

A similar approach for the operation phase will be undertaken. The E&S audit will be undertaken by the Developer E&S Manager on a quarterly basis on the O&M Contractor for the project.

8.2 Labor Audit

Construction Phase

During construction, the Developer will undertake a labor audit. The objective will be to ensure EPC Contractor's and subcontractors' compliance with the relevant requirements related to the project to include in particular the following:

- The Developer's Framework for Labour Management (presented in "Chapter 6")
- IFC 2012 Performance Standards to include PS 2
- EBRD Performance Requirements to include PR 2
- National Egyptian EHS laws, regulations and standards related to HR

The audit will be undertaken by the Developer's E&S Manager and/or CLO on a quarterly basis and an audit checklist will be prepared. The audit will be based on: (i) site visit and inspections; (ii) HR documentation review of EPC Contractor's and subcontractors' (e.g. HR Policy HR Manual, etc.); and (iii) meeting/discussions with EPC Contractors' E&S team and subcontractors' team as applicable.

Based on the above, a monthly audit report will be prepared that will identify: (i) HR observations and non-conformities; (ii) corrective actions require to resolve observations and non-conformities; (iii) identification of responsible entities for implementation of corrective actions; and (iv) timeline for implementation of corrective actions.

Operation Phase

A similar approach for the operation phase will be undertaken. The HR audit will be undertaken on a quarterly basis on the O&M Contractor for the project.

9 CONTRACTOR AND SUBCONTRACTOR E&S MANAGEMENT

The E&S Manual identifies clearly the roles and responsibilities that are expected from the EPC Contractor during the construction phase and O&M Contractor during the operation phase of the Project. This includes in particular the following as a minimum (and to be added based on specific needs identified):

- Prepare, implement and comply with the requirements of the Environmental & Social Management System as identified in "Section 3.3" and "Chapter 5"
- Appoint an E&S team headed by an E&S Manager as identified in "Chapter 2"
- Undertake and participate in E&S meeting and undertake E&S training and inspection/monitoring requirements as identified in "Chapter 7"
- Comply with labour management requirements as identified in "Chapter 6"

In addition, as discussed in "Section 3.3" earlier, the EPC Contractor and O&M Contractor will ensure that all involved subcontractors in the project are provided with the requirements of the E&S of both the Developer and the EPC Contractors/O&M Contractor and they will be required to implement and comply with E&S requirements accordingly. In specific subcontractors will be required to:

- Implement and comply with E&S requirements and conditions as detailed within the E&S plans and procedures provided by the EPC Contractor and O&M Contractor;
- Develop and submit relevant E&S documents and programs (plans and procedures) where required and as applicable for their scope of work. Such documents must be approved by the EPC Contractor and O&M Contractor; and
- Adhere to all applicable local laws, ordinances, statutes, rules, regulations, and codes governing E&S as well as international standards (i.e. IFC and EBRD standards).

The Developer will ensure that all E&S requirements are enforced on the EPC Contractor and O&M Contractor through inclusion in contractual obligations. In addition, as discussed earlier in "Chapter 8", The Developer will undertake periodic audits to ensure that the EPC Contractor/O&M Contractor and all subcontractors involved in the Project during the construction and operation phase adhere to provisions of the E&S Manual and Management system and its associated management plans.

Whether through audits or through any other source of information (e.g. grievance mechanism) it comes to the attention of the Developer that the EPC Contractor/O&M Contractor or any of the subcontractors do not comply with the requirements, the following will apply:

- The Developer will issue a non-compliance report which provides details on the non-compliance issue and justification.
- The Developer will submit the report and notify the EPC Contractor/O&M Contractor
- The Developer will require a corrective action report from the EPC Contractor/O&M Contractor which provides details on the incident, measures taken to rectify the situation and ensure that such an incident does not happen again.
- Depending on the severity of the non-compliance as determined by the Developer, a written formal warning could be issued to the EPC Contractor/O&M Contractor.
- Should the non-compliance incident be repeated (and depending on the severity) a similar process to the above will be undertaken and another written formal warning will be issued.
- Should the non-compliance incident be repeated for a third time, discussions will be undertaken between the Developer and the Project Manager to impose contractual and financial penalties on the EPC Contractor/O&M Contractor.

10 SUPPLY CHAIN RISK ASSESSMENT

The Developer recognizes the potential for risks, particularly labor risks, in project supply chains. To address this, the Developer, and its EPC contractors where relevant, will screen for and assess potential supply chain risks and implement the necessary controls and monitoring actions to primary/core suppliers during both construction and during operations. The approach to supply chain risks management is as follows:

Supplier Screening

The Developer or its EPC contractors will screen for potential supply chain risks associated with project suppliers. This will be done through one or more of the following methods:

- During the tendering process, the key E&S requirements that will be applicable for the scope of work of the subcontractor/supplier will be identified and included within the tender document.
- Tenders will be required as part of the tender to specify how they intend to comply with such requirements as part of their scope of work.
- In the case there is no tendering process subcontractor/supplier will be required to respond to an E&S prequalification questionnaire
- Require company E&S policies
- Undertake an online desktop review (including media research) on the company, their owners and shareholders on E&S reputational issues.

Supplier Assessment

Where supply chain risks have been identified the Developer or its EPC contractors will assess these risks further with the supplier concerned to understand their capacity to avoid and manage such risks and to understand the controls the supplier has in place.

This could include but not limited to: (i) submission of E&S policies and procedures, (ii) traceability, (iii) cascading E&S requirements, (iv) undertaking auditing protocols, etc. Where this is not possible, alternative suppliers will be sought.

Mitigation

The Developer or its EPC contractors will put in place controls to avoid and manage potential risks. This will include but not limited to contractual controls, including corrective actions and exit mechanisms, to avoid and manage potential risks. This would depend on the level of risk identified and the leverage of the Developer or its EPC contractors over the supplier concerned.

Contractual controls could include but not limited to the following:

- Requirement to comply with IFI E&S requirements and national E&S requirement as applicable
- Requirements to comply with the project ESMS and associated manual
- Include clauses that enable the Developer and/or EPC Contractor to undertake inspections and/or audits on supplier to ensure compliance with the requirement above.
- Include clauses allowing imposition of contractual penalties as applicable

Monitoring

The Developer or its EPC contractors will, depending on the risks associated with a supply plan, put in place monitoring approach including reports from suppliers, ad hoc audits, etc to the extent this is feasible. Monitoring will seek to ensure compliance with the mitigation defined, and in cases of non-compliance, help define corrective actions with the supplier concerned. The Developer or its EPC contractors will maintain appropriate records of its supply chain assessment and risk management. Where this is conducted by EPC contractors it will be reported to the Developer on a regular basis.

11 LOCAL HIRING APPROACH

Based on currently available information at this stage, the Project will require the following workforce throughout the construction and operation phase:

- Around 750 job opportunities at peak during the construction phase for a duration of approximately 24 months. This will mainly include around skilled job opportunities (to include engineers, technicians, consultants, surveyors, etc.) and unskilled job opportunities (mainly labourers but will also include a number of security personnel).
- Around 20 job opportunities during the operation phase for a duration of 25 years. This will include skilled job opportunities (such as engineers, technicians, administrative employees, etc.) and unskilled job opportunities (such as security personnel, drivers, etc.).

The Developer is committed to ensuring that priority for job opportunities is targeted for local community members to the greatest extent possible throughout the construction and operation phase for skilled and unskilled jobs.

At a later stage, a local recruitment procedure will be developed by the EPC Contractors, under supervision from the Developer. The procedure will identify the number of job opportunities targeted for local communities to include skilled and unskilled workers. The recruitment procedure will take into account that the recruitment process will be undertaken through the Governorate's Labor Office, which will be provided with a detailed list of job opportunities along with skills and qualifications required. Based on that, the recruitment procedure will also include a selection process that is fair, transparent and provides equal opportunities for all including females, taking into account the labor management requirements identified earlier. At a later stage, a similar process will also be adopted for the operation phase by the Developer that is similar to the above.

12 MANAGEMENT OF CHANGE

Various changes to this manual and its associated management plans and documentation may be required during the Project in order to address foreseen or unforeseen conditions or situations in a manner that is consistent with the Developer's obligations.

During the construction and operation phase, this identified Change Management procedure will be applied to structure the review and approval of identified changes to planned Project arrangements by the Developer and, when required, regulatory authorities or Project lenders. This procedure will be applied to allow E&S issues to be addressed as part of any significant changes to Project procedures, processes, design, or activities.

At a minimum, the ESMS Mannuel will be reviewed on a quarterly basis during the construction phase and annually during the operation phase.

12.1 Scope of Environmental & Social Management System Changes

Changes may be temporary or permanent, related to Project activities, organization, personnel, E&S plans and procedures, equipment, materials, health and safety, environmental or community / wider social issues.

Changes may be initiated by the Developer, the Owner's Engineer and may also be requested by the EPC Contractor or O&M Contractor. In practice, during the construction and operation phase, the Change Management process is likely to be initiated by the Developer or the Owner's Engineer and raised directly with the Developer's E&S Manager.

A Change Request may be generated at any time, for example, during audits, as a result of stakeholder grievances and other complaints, regulatory site visits or interaction with Lenders / Lenders representatives.

The Change Management process will apply when changes occur to any of the following activities or items:

- Alteration of environmental and social impacts management and monitoring measures
- ESMS manual, plans, procedures related to the Project
- Personnel changes, training or competency requirements.
- Organisational structure and/or individual E&S roles and responsibilities
- E&S protection equipment
- Project designs, re-designs, drawings or engineering processes
- The composition and properties of specified materials, chemicals or fuels
- Introduction of new operating or maintenance procedures or changes to existing procedures

12.2 Management of Change Steps

The process is based on the following key steps:

- Identification of item/situation potentially requiring change;
- Requests for Change Form submitted to the Developer E&S Manager defining:
  - Nature of the item/situation requiring change
  - Any impacts resulting from the change (e.g. safety, pollution, public grievance or other complaint); and
  - Any biophysical, social, economic, or health considerations.
- Once impacts are identified, a review should be made of the E&S manual and ESMP in place at the time of the change in order to assess if the mitigations it includes are sufficient to adequately manage the change and its impacts; if not sufficient, the E&S manual/ ESMP should be modified/expanded to ensure that it can manage the impacts and risks that the change will bring in. If sufficient, then no further actions are required.
- The Developer E&S Manager will review proposed changes for compatibility as applicable:
  - Category 1 changes are approved by the Developer Construction/Operation Manager and Developer E&S Manager (with additional consultation if required);
  - Category 2 changes are approved by the Developer E&S Manager (with additional specialist consultation if required) and then submitted to the Construction/Operation Manager for approval;
  - Category 3 changes are agreed between the relevant E&S Officers, the relevant parties/ stakeholders (with additional consultation as required) and are then submitted for approval by the Developer E&S Manager;
  - Category 4 changes are simply approved by the Developer E&S Manager or delegated authority.
- Review and approval by external stakeholders if/as required;
- Compliance with reporting and other obligations in the finance documents;
- Application for, and receipt of, any approvals required to implement the change under Egyptian laws and regulations or under permitting conditions;
- Implementation of the approved change, including communication to appropriate parties concerning the nature, scope and timing of the change; and
- Summary of project changes and status to be included in internal compliance reporting and/or in annual monitoring reports or equivalent to the appropriate regulatory authorities and lenders as appropriate.

12.3 Change Categorization

Category	Nature of Change	Actions Required
1 (Major Change)	Changes which are reasonably likely to result in: ▪ Significant departure from the Project Description and/or a Developer E&S Manual and/or a legal / Lender obligation; ▪ Significant environmental and/or social impact(s) not identified; ▪ Confirmation that a planned mitigation measure for addressing significant environmental and/or social impact(s) are not o predicted to be effective; or ▪ Material amendment or supplement to the E&S is necessary	Developer will notify relevant Egyptian Regulator/Agencies and/ or the Project Lenders within an appropriate timeframe (period as specified in law / the Lenders ESAP or as otherwise agreed). Developer Change Notice will define what change is required, the proposed implementation actions and associated timescale. No changes affecting material environmental and social matters will be implemented without prior Egyptian Agency / Facility Agent/ Lender approval, unless human health or the environment is at imminent risk of serious harm.
2 (Moderate Change)	Changes which are reasonably likely to result in: ▪ Departure from the Project Description and/or Developer E&S Manual requirement and/or an Egyptian legal / Lender obligation ▪ New environmental and/or social impact(s) not identified ▪ Modification to a planned mitigation measure for addressing environmental and/or social impact(s).	Developer will notify the relevant Egyptian Agencies and/or the Project Lenders within an appropriate timeframe. If the Lenders consider that a Change should be re-categorized or that the proposed measures for managing or implementing it are inconsistent with the specified E&S Standards, the Lenders through the Facility Agent and or Technical Advisors shall notify the Company within a reasonable time period. Thereupon Developer and the Lenders Technical Advisors / Facility Agent will make best endeavors to agree a solution. Developer will not implement the proposed Change until a mutually acceptable is agreed. If the Lenders Technical Advisors/ Facility Agent do not respond within an agreed period, Developer will assume that the proposed change is acceptable and will proceed as per plan
3 (Minor Change)	Changes which do not fall within either of the above Categories 1 or 2, but which need to be notified to Egyptian Regulator / Agency or the Lenders.	Developer will notify the relevant Egyptian Agencies/ Stakeholders either in routine meetings or formal reports as appropriate. Developer will notify the any changes made during the course of the year in its Annual Monitoring Report or equivalent mechanism.
4 (Negligible Change)	Other non-material changes	No notifications needed

13 SITE SECURITY ARRANGEMENT

Site security arrangements will be carried out by the EPC contractor and the operation management contractor. The arrangements for the project's security management plan needs to meet international best practice including protocols for personnel screening, training and interactions with the community and public security providers.

14 COMMUNITY SUPPORT INITIATIVES

Community support initiatives and other corporate social responsibility CSR activities will be arranged for and carried out during the operation phase after the public consultation.