

Environmental & Social Impact Assessment (ESIA)

**SUEZ Wind Energy BOO Wind Power Plant
1.1 GW – SWE North (PLOT 1)**

17 July 2024

DRAFT

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EcoConServ
ENVIRONMENTAL SOLUTIONS



ECO
Consult

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RCREEE

Regional Center for Renewable Energy and Energy Efficiency
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LIST OF ABBREVIATIONS

AfDB	African Development Bank
BMP	Biodiversity Management Plan
BOO	Build, Own and Operate
CEA	Cumulative Effect Assessment
CEP	Community Engagement Plan
CHA	Critical Habitat Assessment
CO₂	Carbon Dioxide
CSR	Corporate Social Responsibility
E&S	Environmental and Social
EBRD	European Bank for Reconstruction and Development
EEAA	Egyptian Environmental Affairs Agency
EETC	Egyptian Electricity Transmission Company
EIA	Environmental Impact Assessment
EPC	Engineering, Procurement, and Construction
ESAP	Environmental and Social Action Plan
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System
GDP	Gross Domestic Product
GHG	Greenhouse Gases
GoE	Government of Egypt
GoS	Gulf of Suez
GW	Gigawatt
H&S	Health and Safety
HR	Human Resources
IBA	Important Bird Area
IFC	International Finance Corporation
ISES	Integrated Sustainable Energy Strategy
IUCN	International Union for Conservation of Nature
KBA	Key Biodiversity Area
KPI	Key Performance Indicator
MoM	Minutes of Meeting
MSDS	Material Safety Data Sheet
MW	Megawatt
NG	Net Gain
NGOs	Non-Governmental Organizations
NNL	No Net Loss
NREA	New and Renewable Energy Authority
NTS	Non-Technical Summary
OHSP	Occupational Health and Safety Plan
OHTL	Overhead Transmission Line
OSHA	Occupational Safety and Health Administration

PPE	Personal Protective Equipment
RCREEE	Regional Center for Renewable Energy and Energy Efficiency
SCA	Supreme Council of Antiquities
SEA	Sexual Exploitation and Abuse
SEAH	Sexual Exploitation And Harassment
SEP	Stakeholder Engagement Plan
TSP	Total Suspended Particulate
WWTP	Wastewater Treatment Plant

1. INTRODUCTION

The energy sector is a key driver for the socio-economic development of Egypt, representing around 13% of current GDP and thus making economic growth in the country contingent upon the security and stability of energy supply. To align and reinforce the sector with sustainable development, the Arab Republic of Egypt (through the Ministry of Electricity and Renewable Energy) had developed and adopted the Integrated Sustainable Energy Strategy (ISES) 2015 – 2035, which provides an ambitious plan to increase the contribution of renewable energy to 42% of the country's electricity mix by 2030, of which wind power is a key component, to be developed mostly in the Gulf of Suez (GoS) due to the wind characteristics in the area.

As a result, the GoE issued the Renewable Energy Law (Decree Law 203/2014) to support the creation of a favourable economic environment for a significant increase in renewable energy investment in the country and establishes the legal basis for the Build, Own and Operate (BOO) framework. Through the BOO mechanism, the Egyptian Electricity Transmission Company (EETC) invites private investors to submit their offers for solar and wind development projects, for specific capacities and the award is to be made to that bidder with the lowest Kilowatt Hour (kWh) price. In addition, the GoE (through the New and Renewable Energy Authority (NREA)) provides the land for the investors.

In accordance with the Law above, a consortium composed of ACWA Power and Hassan Allam Utilities B.V (hereafter referred to as 'the Developer') is proceeding with developing a new wind power plant project (Suez

Wind Energy – (SWE)) with a capacity of 1,100MW under the BOO scheme. SWE is to be developed over two (2) Plots – the first located within the northern parts of the Gulf of Suez (hereafter referred to as 'Plot 1') and the second located within the southern parts of the Gulf of Suez - Plot 2.

The Regional Centre for Renewable Energy and Energy Efficiency (RCREEE) is managing the Environmental and Social (E&S) process for the Project development on behalf of the Developer. RCREEE commissioned the consortium consisting of EcoConServ, ECO Consult and Safe Soar (hereafter referred to as 'the ESIA Consultant') to carry out an Environmental and Social Impact Assessment (ESIA) for the Project.

As noted earlier, the above 1,100MW Project will be developed over two (2) plots. Given the geographical distance between the plots, from an environmental and social perspective, separate ESIA studies will be undertaken for each plot. This report represents the ESIA for Plot 1 / SWE North.

2. PROJECT DESCRIPTION

2.1 Project Setting

The Project is located in the Red Sea Governorate of Egypt, around 211 km to the southeast of the capital city of Cairo. More specifically, the Project is located near the Red Sea shoreline and within the Ras Gharib District of the Red Sea Governorate, where the closest residential areas include Ras Gharib city (located 19.7 km to the east) refer to the figures below.

The Project is located within a 300km² Strategic Area that has been allocated by NREA for wind farm development Projects with a total capacity of 1,500 MW. Refer to Figure 3. for the Strategic Area location in relation to the Project site. A strategic ESIA study has been undertaken for the 300km² area known as the "ESIA for an Area of 300km² at the Gulf of Suez" (Lahmeyer & Ecoda, 2013) (hereafter referred to as "Strategic ESIA"), where this Strategic ESIA investigated the E&S issues at cumulative and strategic level.

Within this, a land area of 145 km² (presented in the figures below) has been allocated to the Developer by NREA for the development of this Project.



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



Figure 2: Project Site and Closest Villages

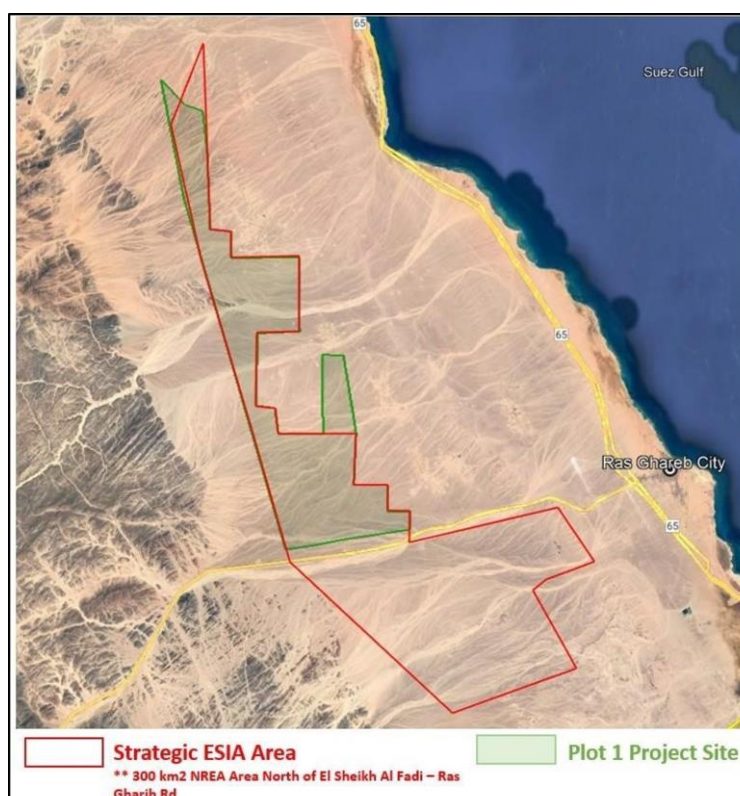


Figure 3: Project Site as Part of the 300km2 Area Allocated for Wind Farm Developments

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 19.7 km to the east).

Ras Gharib City is the second-largest city in the Red Sea Governorate, and the most important Egyptian city in terms of oil production.

As discussed earlier, the Project is located within a 300km² area that has been allocated by the GoE to NREA for development of wind farms. Within this, a land area of 145 km² has been allocated to the Developer by NREA for the development of this Project.

Table 1 Project Site Coordinates

Point	WGS Coordinates	
	Latitude	Longitude
1	28.615215°	32.697273°
2	28.537443°	32.714706°
3	28.307687°	32.790744°
4	28.320687°	32.882920°
5	28.332656°	32.883035°
6	28.332639°	32.866592°
7	28.349849°	32.866863°
8	28.349921°	32.841234°
9	28.383821°	32.843178°
10	28.434599°	32.833706°
11	28.435147°	32.818074°
12	28.383098°	32.818490°
13	28.383539°	32.785204°
14	28.400148°	32.782533°
15	28.401697°	32.768413°
16	28.449028°	32.769706°
17	28.450261°	32.800961°
18	28.498779°	32.800497°
19	28.498305°	32.750015°
20	28.515613°	32.749931°
21	28.516918°	32.734239°
22	28.566613°	32.732002°
23	28.588506°	32.729232°
24	28.594769°	32.728442°
25	28.598624°	32.715303°

2.2 Project Components

Wind turbine technology relies on harvesting the kinetic energy in wind (i.e. movement of wind) and turning it into mechanical energy which in turn is used for electricity generation. The key components of the Project include the following:

- **Wind Turbines:** a typical wind turbine is presented in the figure below. For this Project there are to be 69 wind turbines occupying the project site for a capacity of 8.0 MW, respectively. The turbines under either possibility will have a hub height of 110 m and a rotor diameter of 110 m, respectively.

- Supporting infrastructure and utility elements for the Project which will include:
 - Cables that will connect the turbines to an onsite substation
 - Substation that converts the output from the turbines to a voltage that is appropriate for connection with the National Grid
 - Onsite building infrastructure that will include an administrative building (offices) and a warehouse for storage of equipment and machinery
 - Road network for ease of access of various project components throughout the site
- Associated facilities which will mainly include an Overhead Transmission Line (OHTL) that will connect from the substation onsite to the National Grid.

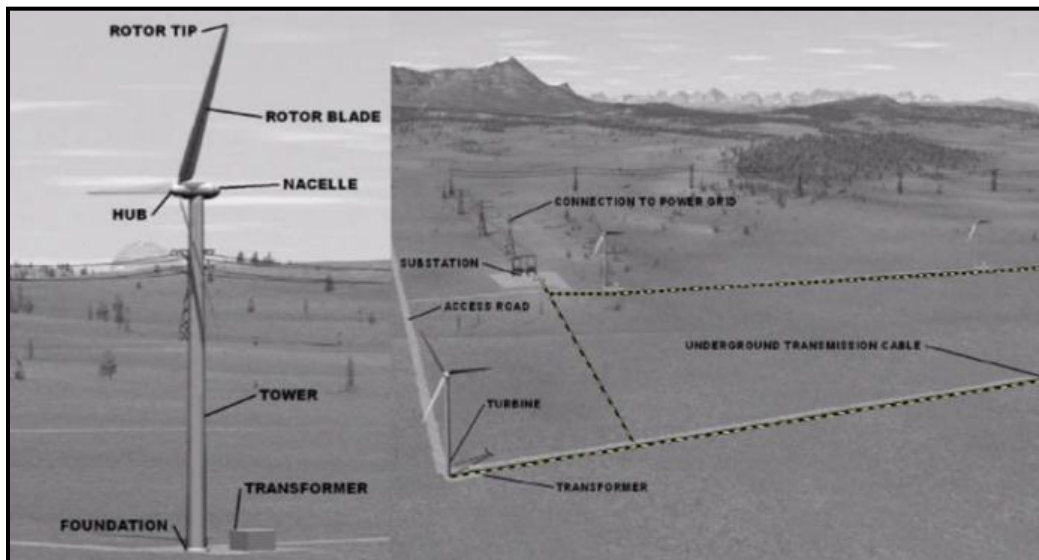


Figure 4: (a) Typical Structural Components of a Wind Turbine, (b) Typical Components of a Wind Farm

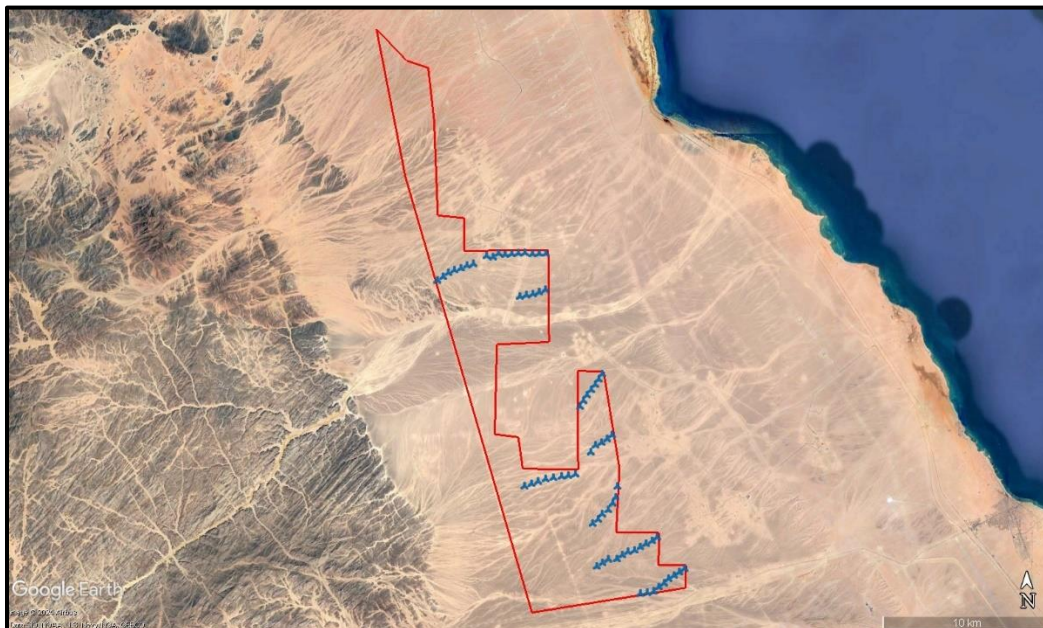


Figure 5: Project Site Turbine Layout

2.3 Project Phases

The Project will include 3 distinctive phases as follows:

- Design and Construction Phase that will include: (i) preparation of the detailed design, (ii) transportation of components to the site, (iii) site preparation activities (land clearing, excavations, etc.), and (iv) installation of components.
- Operation Phase that will include the normal daily operation of the wind farm and the undertaking of maintenance activities as required.
- Decommissioning Phase that will include the dismantling of the various Project components at the end of the life time.

According to the current timeline, construction of the Project is anticipated to commence approximately Q4 of 2024 and will require approximately 30 months for construction and commissioning (i.e. mid-year 2027). Operation of the Project is therefore anticipated to commence in late 2027 for a period of 25 years.

3. SUMMARY OF ENVIRONMENTAL AND SOCIAL BASELINE CONDITIONS & IMPACTS

3.1 Introduction

The Environmental and Social Impact Assessment (ESIA) comprised environmental and social baseline studies and an assessment of impacts. Mitigation measures, which are included in the ESMP, were identified for potential significant effects and the significance of residual effects determined. The impact assessment followed an assessment methodology developed to reflect current best practice. The key baseline and impact assessment findings are further discussed below.

3.2 Stakeholder Consultations

As part of the scoping process of the Project, targeted consultations were undertaken with key stakeholders that are relevant to the Project to include but not limited to: central governmental entities; local governmental entities; key Non-Governmental Organizations (NGOs); and local community representatives. Throughout the consultations, a handout (in Arabic language) was prepared and distributed to such stakeholder groups with key information to include but not limited to rationale for Project, Project location and setting, key components and activities of the Project and other as applicable.

The table below is a condensed breakdown of the stakeholder categories that were engaged in this process.

Table 2: Summary of Consultations

Stakeholder	Number	
	Males	Females
Ministry of Tourism and Archeology Red Sea Archeology and Heritage Institute	2	
Nature Conservation Egypt (NCE)	1	-
Egyptian Environmental Affairs Agency EEAA	1	-
Egyptian Electricity Transmission Company EETC	-	4
EEAA Red Sea Branch	1	-

Stakeholder	Number	
	Males	Females
State property Department in the Red Sea Governorate	1	-
Ras Gharib City Council	1	-
local unit of Wadi Dara village	5	-
Red Sea Water and Wastewater Company	1	-
Department of Planning and Projects in the Red Sea Governorate	-	1
General Petroleum Company	1	-
General Administration of Ground Water in Red Sea	-	1
Etisalat Misr Orange company	2	-
Radio and Television Unit in Ras Ghareb and the Red Sea Governorate	4	-
Bedouin families in Ras Gharib	12	-
Total	32	6

3.3 Environmental & Social Baseline Conditions & Impacts

3.3.1 Landscape and Visual

The Project site is a plain area with fine topography except at the upstream part of the mainstream of Wadi Hawashyia basin. The ground surface of the whole project area is covered by clastic sediments of gravels, pebbles and sometimes boulder of different rock fragments imbedded in fine sand and silt.

The Project site is completely devoid of any dense vegetation, nonetheless for some simple seasonal grasses that grow after the rain falls in scattered spots in front of the first dam in Wadi Hawashiya and the streams of some shallow drainage. Long, wide and shallow dry wadies represent the upstream parts of the drainage basins the project area on their way from West-Northwest to East-Southeast directions.

In terms of visual characteristics, no critical visual receptors were identified within the 10km radius. The area in general includes the following:

- Petroleum activities;
- Several planned and existing wind farms;
- Existing Overhead Transmission Lines (OHTL) and substations;
- A Dam;
- Telecommunication towers; and
- Several military posts.

The key impacts from the Project development are limited to the operation phase and which include impacts from Project visibility are associated with, typically, the turbines themselves (e.g. colour, height, and number of turbines) and impacts relating to their interaction with the character of the surrounding landscape and the visual receptor which might be present.

These impacts are considered not significant given that there are no key sensitive visual receptors (communities, visitors or otherwise that would be impacted) within nor in proximity to Project. In fact, the Project is located within an industrial area which also includes several other wind farm developments, for which aesthetical value loses some importance.

Impact Overview: Construction Phase

- Site preparation activities involve land clearing, levelling, excavation, grading, etc., potentially altering the visual quality of the desert terrain temporarily.
- Presence of construction equipment and machinery may disturb the natural appearance of the site and its surroundings.
- Visual impacts during construction are expected to be of medium magnitude but are considered minor due to the distance from sensitive receptors.

Mitigation Measures: Construction Phase

- Implement proper housekeeping and personnel management measures.
- Maintain an orderly construction site and remove unused machinery and equipment promptly.
- Ensure proper storage, collection, and disposal of waste streams.
- Implement restoration and rehabilitation measures post-construction.

Potential Impacts during the Operation Phase:

- Visual impacts mainly concern the wind turbines themselves and their interaction with the landscape.
- Turbines, being tall structures, can be visible from several kilometers away and may alter the landscape.
- Visual impacts are mitigated by factors such as distance, landscape characteristics, and the absence of sensitive visual receptors within the project area.

Mitigation Measures:

- Ensure no critical or sensitive visual receptors are within the project area and its vicinity.
- Consider the barren and industrial nature of the project area, reducing the significance of visual impacts.
- Recognize existing wind farm developments and transmission lines in the area, minimizing the additional impact of the project.
- Acknowledge the subjective nature of aesthetic issues regarding wind farms.
- Address potential distraction to drivers passing near the project site.

Monitoring and Reporting Requirements:

- Inspections should be conducted regularly to ensure adherence to mitigation measures during both the construction and operation phases.

3.3.2 Land Use & Infrastructure

The Project site location does not conflict with any environmental land use planning such as areas of critical environmental concern – in particular, the Project site is not located within environmental

protectorates or Important Bird Areas (IBAs). The Project is located within the Strategic ESIA Area as mentioned earlier.

A detailed land use survey was undertaken for the Project site to understand any informal land use activities undertaken such as physical activities (houses, structures, etc.) or economical activities (such as grazing, agricultural, etc.).

Few activities may occur within the Project site with a limited number of structures including the Buhaira One Dam and decommissioned petroleum wells and pools. No evidence of such activities (e.g. ploughing marks, abandoned structures, livestock remains, etc.) were observed during the land use survey that would otherwise indicate the land's use for herding, recreation nor residence.

There are two (2) telecommunication towers belonging to Orange and Etisalat Misr located along the Project site's southern border.

Various infrastructure elements were recorded within the Project site and along its perimeter including telecommunication towers, closed oil wells, high voltage lines, and others indicated in the figures below.

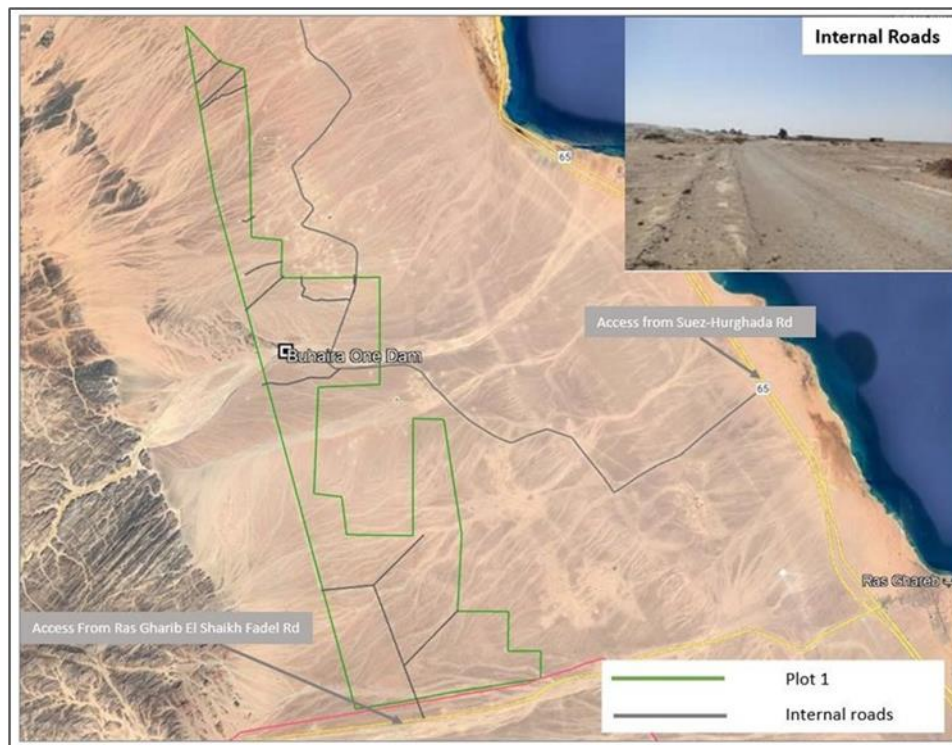


Figure 6: Main roads and informal (dirt paths) in and around the Project Site

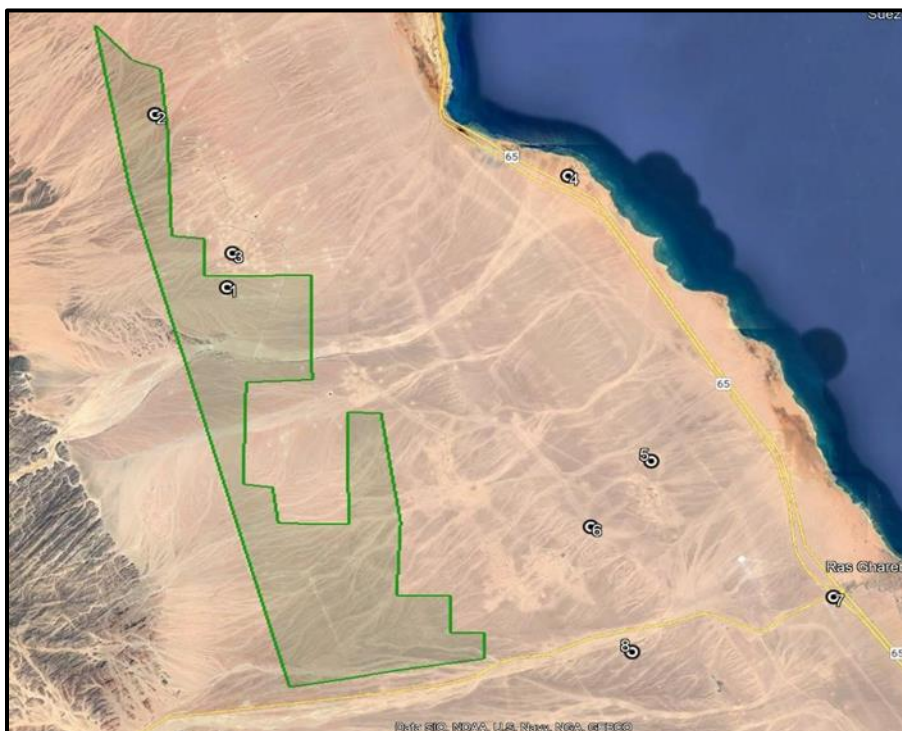


Figure 7: Infrastructure located around and in the proximity of the Project Site

Table 3: Infrastructure located within and around the Project Site

#	Facility	Lat.	Long.
1	Closed oil well	28.493481°	32.761128°
2	Closed oil well	28.573945°	32.726597°
3	Oil storage tanks	28.509411°	32.763599°
4	Petroleum companies complex	28.545908°	32.923280°
5	Dara Petroleum Company	28.412776°	32.962833°
5	West Bakr oil collection station K	28.368564°	32.920650°
6	West Bakr Oil Company	28.382221°	32.933988°
7	Petrojet Camp, Ras Gharib	28.349288°	33.049770°
8	Petroleum Unit	28.323961°	32.953603°

Apart from the above, it is important to note that area is under the “Ghafa System” of Bedouin Groups (although they have no physical or economical activities within the site), which entails involving such Bedouin groups in the Project (through jobs, services, etc.) for their support. In particular, the key Bedouin Groups known in the area are the Tabbna and the Hamadin families.

Taking the above into account, there are no physical or economical displacement impacts anticipated from the development of the Project and no key issues of concern are expected. Nevertheless, the ESIA identifies mitigation measures to be implemented at the planning stage to include:

- Establish coordination via NREA with the relevant entity (such as General Petroleum Company) to agree on any specific requirements to be taken into account as part of the detailed design for existing facilities such as the petroleum storage facility and oil rig, amongst other requirements; and

- Establish coordination with the Bedouin Groups for inclusion and engagement in employment opportunities during construction and operation to obtain their support.

Impact Overview:

- The project site is generally uninhabited and vacant, with no significant physical or economic land use activities, except for petroleum activities.
- Historical land use by Bedouin groups under the Ghafra system is acknowledged, potentially leading to conflicts if not addressed appropriately.
- Failure to consider these issues in the planning phase could result in long-term, negative impacts, including disputes with Bedouin groups and the General Petroleum Company.

Mitigation Measures:

- Coordinate with Bedouin groups for their involvement in employment and procurement opportunities.
- Implement a Stakeholder Engagement Plan (SEP) with specific provisions for engaging and coordinating with Bedouin groups, ensuring transparency and regular communication.
- Disclose the SEP to tribal leaders through scheduled meetings and distribute relevant updates and notifications regularly.

Monitoring and Reporting Requirements:

- Monitor the effectiveness of the grievance mechanism for Bedouin communities to address concerns and conflicts, ensuring accessibility, transparency, and responsiveness.
- Submit documentation of employment and procurement procedures involving Bedouin groups.
- Provide evidence of coordination and agreement with Bedouin groups as part of the SEP, including engagement records.

3.3.3 Hydrology and Hydrogeology (Soil and Groundwater)

The project site is located in an area of wadi deposits, surrounded by local moderately to low productive aquifers with insignificant surface and limited sub-surface recharges. Surface water hydrology in the area of the project concerned mainly about the accumulation of rainwater in the watershed areas of dry wadies and the nature of flow along the main streams of them.

The project site is dissected by five main streams of drainage basins. The watershed area of Wadi Hawashyia is the largest among the others. Therefore, the volume of rainwater accumulated in the drainage basin of Wadi Hawashyia is big enough to be considered if we consider the possibility of flooding in the project area.

Based on the history of flooding practiced in Wadi Hawashyia, three successive dams were built after the flash flood disaster in 2016. One of these dams – the Buhaira One Dam – is located within the Project site.

Buhaira One Dam is located at the far west just below the foot slope the high lands (watershed area). At the site of the dam, an artificial lake was constructed in upstream part of the dam. The average dimension of the dam and artificial lake are provided below.

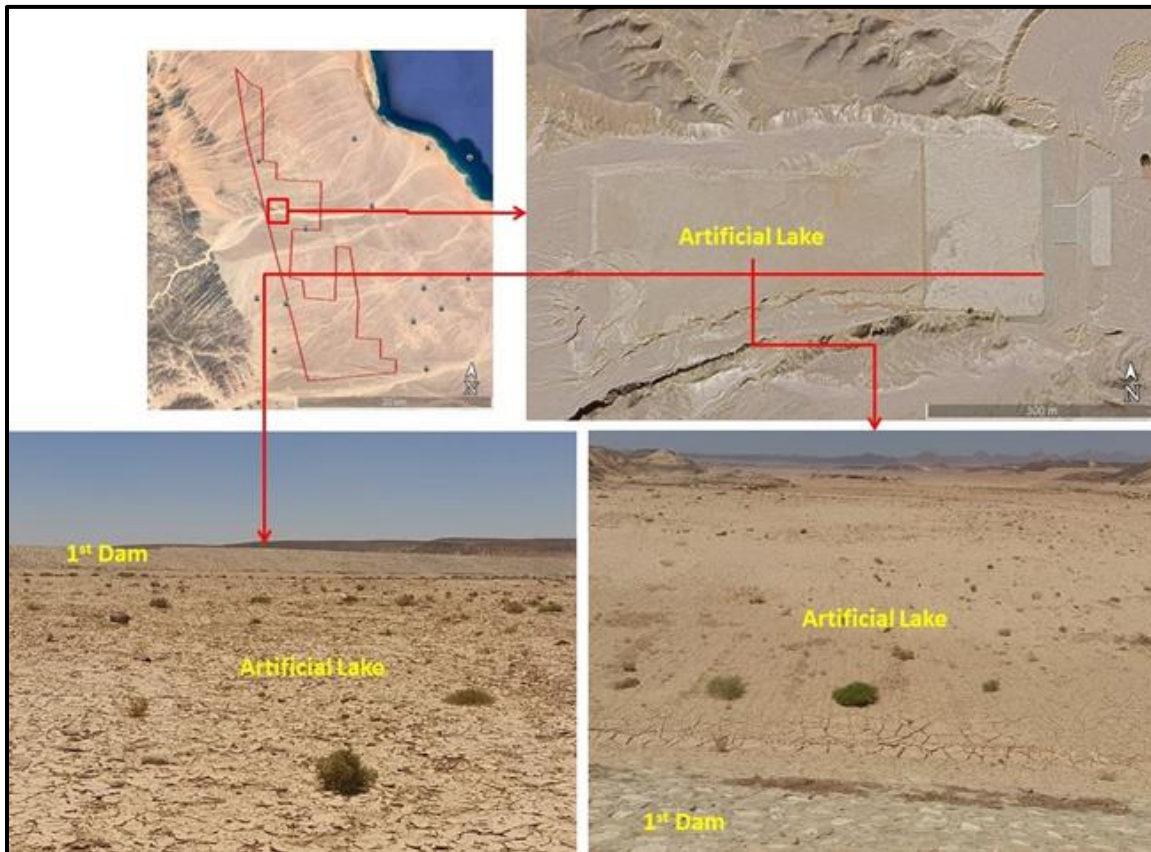


Figure 8: Buhaira One Dam and Artificial Lake

Key impacts related to the Project include potential for flood risks which could affect the Project site during the rainy season and especially during flash flood events. At the time of the development of the ESIA, the developer was in the process of undertaking a flood risk assessment of the Project site.

Impact Overview:

- Investigation of potential flood hazards from wadi systems during rainy seasons and flash flood events is crucial.
- Failure to address flood risks could lead to infrastructure damage, impacting health and safety.
- Flood risk assessment is being conducted using simulated models based on multi-source data, considering climate change impacts and risks.

Mitigation Measures:

- Undertake a flood risk assessment for the project site, incorporating simulated models based on climate satellite images, rainfall data, and digital elevation models.
- Conduct site visits to verify study results and model designs.

- Consider climate change impacts and risks in the assessment.

Potential Impacts from Improper Management of Waste Streams during Construction and Operation:

Impact Overview:

- Improper management of waste streams could contaminate soil, pollute groundwater, and pose risks to workers' health and safety.
- Impacts can be controlled through best practice housekeeping measures during both construction and operation phases.

Mitigation Measures:

- Implement proper sorting, storage, and disposal of waste streams, distinguishing between solid non-hazardous and hazardous wastes.
- Coordinate waste collection and disposal with relevant authorities and contractors.
- Prohibit illegal disposal of waste to the land and ensure adherence to waste hierarchy principles.

Monitoring and Reporting Requirements:

- Regularly inspect waste management practices onsite.
- Review records and manifests for consistency in waste volume data.
- Provide regular environmental reports on waste management practices.

Additional Mitigation Measures for Specific Waste Streams:

Solid Waste Generation:

- Sort and store waste according to categories.
- Coordinate waste collection with the municipality or waste contractor.
- Prohibit fly-dumping and distribute litter bins appropriately.

Wastewater Generation:

- Coordinate wastewater collection with relevant authorities or contractors.
- Prohibit illegal disposal of wastewater and ensure proper maintenance of septic tanks.

Hazardous Waste Generation:

- Coordinate hazardous waste collection and disposal with licensed contractors.
- Ensure proper storage and labeling of hazardous waste.
- Prohibit illegal disposal and maintain records of hazardous waste management.

Hazardous Material:

- Store hazardous materials properly and maintain a register of their usage.
- Incorporate measures to prevent spills and leakage during handling and storage.
- Respond promptly to spills and report measures taken to minimize impacts.

Potential Impacts from Erosion and Runoff during the Construction Phase:**Potential Impacts Overview:**

- Construction activities could increase erosion and runoff, leading to siltation of surface water.
- Adequate control measures are necessary to minimize these impacts.

Mitigation Measures:

- Avoid excavation works during aggressive weather conditions.
- Implement erosion control barriers and clear markers around the work site.
- Restore disturbed surfaces to their original condition as much as possible.

Monitoring and Reporting Requirements:

- Regularly inspect erosion and runoff control measures onsite.
- Conduct inspections to ensure implementation of mitigation measures.

3.3.4 Biodiversity

The biodiversity baseline assessment concludes that the Project site in general is barren and of low ecological significance and sensitivity. The assessment identified several flora, fauna and avi-fauna species within the Project site most of which are considered of least concern and common to such area habitats. There are no sensitive habitats recorded within the Project site.

The main impacts on biodiversity are mainly from improper conduct, traffic control and housekeeping practices by workers (i.e. hunting of animals, discharge of hazardous waste to land, etc.) during the construction and operation phase throughout the site to safeguard flora and fauna. The ESIA has identified adequate mitigation measures which aim to control such impacts and ensure proper conduct and housekeeping practices are implemented. With the implementation of such measures the impact is considered potentially significant.

Potential Impacts Overview:

- Habitat Loss, Fragmentation and Degradation
- Introduction of invasive species
- Disturbance of identified species on site

Mitigation Measures:

- Mandatory staff induction for all site including a comprehensive biodiversity element where the baseline ecological value and sensitivity of the site will be discussed.
- Prior to construction works, working areas will be clearly marked (using temporary fencing (e.g. orange netting attached to wooden posts)) so that site workers fully understand the working area and minimize encroachment into features of local habitats and identification of sensitivity of receptors
- On completion of construction the engineering, Procurement and construction (EPC contractor) will be responsible for habitat rehabilitation
- Following construction, an area of around 2.0 km² will be enhanced using appropriate, native planting in suitable parts of the Project Area to ensure no net loss of habitat has occurred
- Occurrences of non-native species are to be identified and removed
- Wheel washing facilities constructed at the Project site's entrance and wastewater disposed of accordingly to prevent spread of undesirable species
- Species identified as vulnerable receive specific mitigations under the Construction Biodiversity Management / Biodiversity Action Plan
- Working areas to avoid vegetated areas
- Relocation of vulnerable species when necessary, such as for the Egyptian Spiny-tailed Lizard
- Vehicular speeds will be limited and enforced to avoid traffic collisions with animals
- Strict controls enforced on poaching and collection for animals
- Proper and strict housekeeping measures and waste management enforced

Monitoring and Reporting Requirements:

- Outside of agreed working areas will be prohibited and working areas will be subject to regular check by the EPC Ecologist to check enforcement of working areas.

3.3.5 Birds (avi-fauna)

A baseline assessment was undertaken that included an avi-fauna survey that studied the use of the migratory and resident soaring birds of the Project site, while providing a detailed analysis of the durations that these species use the site and the elevations at which they are present, which would eventually provide an in-depth understanding of the predicted impact of the Project on bird species.

The survey was undertaken through eighteen (18) observation points that covered the spring 2022 and 2023 and autumn 2022 and 2023 bird migration seasons. On average, each observation point was for a minimum of 8 hours per day and per season as follows: in spring 2022 – 185.9 hours per VP for a total of 3,345.3 hours; autumn 2022 – 264.9 hours per VP for a total of 4,768 hours; spring 2023 – 247.5 hours per VP for a total of 4,455 hours; and autumn 2023 – 266.6 hours per VP for a total of 4,798.5 total hours.

During spring surveys, over 208,000 individual birds were recorded in spring 2022 and 266,000 in 2023. In

autumn, 8,244 individual birds were recorded in 2022 and 17,619 in 2023. 23 species were recorded with a total of 62,451 individual birds. Among globally threatened species during the observation periods are detailed in the following tables.

Table 4: Avifauna designated as Vulnerable Species identified during Avi-fauna Survey for all seasons

Species	Spring 22		Spring 23		Autumn 22		Autumn 23	
	Total Number	At risk height	Total Number	At risk height	Total Number	At risk height	Total Number	At risk height
Eastern Imperial Eagle	24	11	41	36	0	0	1	1
Greater Spotted Eagle	12	5	16	12	0	0	0	0
Sooty Falcon	0	0	1	1	21	21	15	15
Red-footed Falcon	0	0	1	1	3	3	0	0
TOTAL	36	16	59	50	24	24	16	16

Table 5: Avifauna designated as Endangered Species identified during Avi-fauna Survey for all seasons

Species	Spring 22		Spring 23		Autumn 22		Autumn 23	
	Total Number	At risk height	Total Number	At risk height	Total Number	At risk height	Total Number	At risk height
Steppe Eagle	2,055	871	18,793	14,501	2	2	6	3
Egyptian Vulture	84	58	260	182	0	0	0	0
TOTAL	2,139	929	19,053	14,683	2	2	6	3

Table 6: Avifauna designated as Near Threatened Species identified during Avi-fauna Survey for all seasons

Species	Spring 22		Spring 23		Autumn 22		Autumn 23	
	Total Number	At risk height	Total Number	At risk height	Total Number	At risk height	Total Number	At risk height
Pallid Harrier	21	21	16	14	21	20	27	26
Dalmatian pelican	1	1	0	0	0	0	0	0
TOTAL	22	22	16	14	21	20	27	26

Potential Impacts Overview:

- Key impacts anticipated on birds is during the operation phase and mainly related to risk of bird strikes and collisions with rotors of the operating wind turbines. The majority of species passing through are at low risk of collision annually. Those of conservation concern (i.e. considered endangered by the International Union for the Conservation of Nature's Red List) or associated with potentially high levels of collision are the Steppe Eagle, for which collisions could amount to approximately 12.25 collisions during the operational lifetime of the Project and the Egyptian Vulture – 0.32 collisions during the Project's operational lifetime.
- Other species with notable collision risk that were identified included Levant Sparrowhawk (0.24

collisions per year), Steppe Buzzard (3.43), White Stork (23.02), Common Kestrel (0.32), Black Kite (0.6), White Pelican (1.57) and Honey Buzzard (7.86). The populations of these species are typically abundant, and the species are not of conservation concern.

- Of particular interest regarding the monitoring of birds was the dam and artificial pond located within the Project site. The artificial pond, which forms during rainfall in the winter typically once every four years, is a source of attraction for storks, pelicans and other water birds. Water was present in the dam in 2022, at which time 6,000 White Storks were recorded in a single day with over 15,000 individuals (about 11% of the total number of birds recorded during the migration season). Scarce numbers of birds were present at this location when no water was present in 2023.
- The Collision Risk Model indicated that species passing through the Project site are at low risk of collision on an annual basis.

Mitigation Measures:

- Bird Monitoring and Active Turbine Management Program (Shutdown On-Demand and Predictive Fixed Shutdown Programs using strategically located vantage points for monitoring flight activity and to facilitate effective turbine shutdown and effective communication networks between bird observers as well as and wind turbine operators
 - All of the turbines and a buffer area is to be covered by constant observation.
 - The buffer is to ensure that enough time is available for WTG to be shut down when birds approach
 - Observers are to work in pairs and in shifts to ensure a vigilant effort from observers.
 - Observers are to communicate both with shut down operatives and other observers to ensure effective practices
- Shut down protocol is to be undertaken in discussion with other operatives in the region to discuss best practice for the location
- Current WTG layout takes into account a 2km setback distance from the Dam area which is a source of attraction for migratory birds particularly during spring season.

Monitoring and Reporting Requirements:

- Fatality Monitoring Program entailing a systematic fatality survey (i.e. carcass searches) by trained experts which have become the main means of monitoring collision victims and estimating collision rates at wind power plants worldwide.
- Operational monitoring is to be completed for at least the first 3 years of operation, with scope to continue depending upon results during the first three years, all years of operation to monitor actual levels of mortality.
- Post construction fatality monitoring is to be completed at all of the turbines and the programme of post construction monitoring is to include carcass searching, searcher efficiency trials and carcass persistence trials. The results of the post-construction fatality monitoring is to be used to inform a GenEst Analysis. Such effort is to be in line with the Post-construction Bird and Bat Fatality Monitoring

for Onshore Wind Energy Facilities in Emerging Market Countries – Good Practice Handbook and Decision Support Tool (2023).

3.3.6 Bats

The presents of bats was evaluated using a nocturnal acoustic survey and a manual search of possible roosting sites across and within the near proximity of the Project area. Eight (8) acoustic detectors were utilized across 24 locations that were aligned with intended wind turbine locations. Based on the literature review, several bat species of ‘least concern’ (IUCN Red List of Threatened Species) could be present in the area; however, the Project site is characterized by low vegetation coverage and limited habitat.

Four known and two unknown species of bat were recorded across the survey period. The known bat species were Arabian Barbastelle Barbastella leucomelas, European Free-Tailed Bat Tadarida teniotis, Botta’s Serotine Epitesicus bottae and Desert Long-Eared Bat Otonycterus hemprichii.

Potential Impacts Overview:

- Key impacts anticipated on bats is during the operation phase and mainly related to risk of bat strikes and collisions with rotors of the operating wind turbines. Such impacts are anticipated to be not significant due to low activity excepted as roosting sites for bats were not observed on the Project site.

Mitigation Measures:

- Implement adaptive monitoring during post construction – fatality monitoring in accordance with international best practices

Monitoring Requirements:

- Post construction fatality monitoring around wind turbines

3.3.7 Archaeology and Cultural Heritage

An archaeological baseline survey has been carried for the Project site which concluded the absence of records of any sites of interests or significance within the Project area. Therefore, there are no anticipated impacts.

The main potential impact could occur during the construction phase from site preparation activities if a possible site of archeological remains is uncovered. Improper management (if such sites are discovered) could potentially disturb or damage such sites. Nevertheless, the ESIA requires the implementation of chance find procedures if such remains in the ground be discovered throughout the construction phase. With the implementation of such measures the impact is considered not significant.

Potential Impacts Overview:

- Site preparation activities may involve land clearing, excavation, and grading, posing a risk to archaeological remains.
- Although no surface archaeological sites are identified, buried remains may be discovered during construction.

Mitigation Measures:

- Notify the Supreme Council of Antiquities (SCA) during excavation activities to oversee and prevent disturbance of underground archaeological remains.
- Implement chance find procedures, including halting construction, fencing the area, and notifying relevant authorities if archaeological remains are discovered.

Monitoring Requirements:

- Submit formal communication with SCA regarding excavation activities.
- Inspect actions taken in case of new archaeological discoveries and report to the Ministry of Tourism and Antiquities/Red Sea and Suez Antiquities Inspection Office.

Note: There are no anticipated impacts during the operational phase of the project.

3.3.8 Air Quality and Noise

An air quality and noise baseline was undertaken for the Project area at three monitoring points for a period of 24 hours. The baseline concluded that pollutant levels for all parameters measured are significantly lower than the maximum allowable ambient air levels indicated within the legal limits. Similarly for noise, the results were within national limits for both day and night-time.

No key source of noise emission or activity were noted throughout the monitoring period. Therefore, the exceedance of noise levels is mainly attributed due to the intensity and speed of the wind at the measurement sites, despite efforts to mitigate the effect of wind speed on measurements.

Construction and operation activities of wind power project are passive in nature and do not result in any key air emissions or significant noise sources. However, construction activities may increase level of dust and particulate matter emissions, which will temporarily impact ambient air quality due to the use of heavy machinery contributing to both noise levels and dust.

Potential Impacts Overview:

- Anticipated impacts on air quality and noise during both construction and operation phases of the wind farm.
- Construction phase activities expected to increase dust and pollutant emissions, as well as noise levels, temporarily.
- Potential health and nuisance effects on onsite workers and nearby receptors, though closest community is 18km away.
- Operation phase impacts primarily related to noise generated by wind turbines, discussed in detail in Public Health and Safety section.

Mitigation Measures:

- Identification and control of excessive dust and pollutant emissions from construction activities.

- Provision of Personal Protective Equipment (PPE) for workers exposed to high dust and noise levels.
- Implementation of dust control measures like regular watering of roads, proper stockpile management, and covering of trucks transporting materials.
- Inspection and maintenance program for vehicles and equipment to minimize unnecessary emissions.
- Identification and mitigation of excessive noise levels through source control and general noise suppression measures.

Monitoring and Reporting Requirements:

- Dust and noise monitoring on a quarterly basis at key construction points, including Total Suspended Particulates (TSP), PM10, PM2.5, and noise levels.
- Periodic inspections at nearby sites to assess dust and noise impacts from construction activities.
- Reporting of excessive pollutant/dust or noise levels and measures taken to mitigate impacts.

3.3.9 Infrastructures and Utilities

Water Resources and Utilities – the Project is expected to require significant amounts of water throughout the construction phase. This will include water for construction requirements (concrete works, minimize dust, etc.) and potable use (drinking, washing, etc.). Similarly, during the operation phase, water will mainly be required for potable use of onsite staff at the Wind farm but is expected to be minimal and insignificant. The Contractor and Operator are required to coordinate with Ras Ghareb Water Company to secure water requirements for the Project, most likely through tankers.

Waste Utilities – solid waste, wastewater and hazardous waste generated during the construction and operation phase will be minimal and is expected to be managed and disposed through coordination with relevant authorities for disposal of waste streams (e.g. Ras Ghareb Water Company for wastewater and Ras Gharib City Council – solid waste).

Road Networks: Given the increasing size, weight, and length of components of the wind turbines, proper transportation and logistical solutions could be required for managing the heavy-load long-haul requirements. If improperly planned and managed, trucks hauling the various heavy Project components may damage existing roads, highways, bridges, utility lines (e.g. electricity lines), and could also be a public safety concern for other vehicles on the road. The Contractor will be required to prepare a Traffic and Transport Plan before commencement of any transportation activities to ensure that process is properly and adequately managed.

Aviation and Telecommunication: Improper planning and site selection of the Project could impact and affect infrastructure elements related to aviation, telecommunication and television & radio links in the surrounding area. ESIA requires establishing coordination with relevant entities to provide information on the Project and include any specific requirements to be considered as part of the detailed design, if required.

Potential Impacts Overview:

Potential Impacts on Road Networks during Planning and Construction Phase:

- Heavy-load transportation for wind turbine components may damage existing roads, highways, and bridges.
- Public safety concerns due to increased truck traffic hauling heavy components.

Potential Impacts on Civil and Military Aviation during Planning and Construction Phase:

- Wind turbines could interfere with aircraft safety and surveillance systems.
- Improper planning may lead to disturbances in aviation practices.

Potential Impacts on Petroleum Facilities during Construction:

- Inappropriate management may damage or disturb nearby petroleum facilities and road networks.
- Coordination with relevant entities required for detailed design considerations.

Potential Impacts on Water Resources during Construction and Operation:

- Short-term impacts on water resources during construction phase; the Project is to require around 70,000 m³ and 47,500 m³ for construction requirements (concrete works, minimize dust, cleaning of requirements, etc.), and 22,500 m³ as potable water requirements (drinking, washing);
- Long-term impacts on water resources during operation phase will be considerably less to include potable water for on-site operational staff (i.e. approximately 20 on-site staff)
- Coordination with Ras Gharib Water Company for water supply.

Potential Impacts on Waste Utilities during Construction and Operation:

- Generation of wastewater, solid waste, and hazardous waste during construction and operation phases.
- Coordination with relevant authorities for waste collection and disposal.

Potential Impacts on Telecommunication and Television & Radio Links during Planning and Construction Phase:

- Wind turbines may interfere with telecommunication, TV, and radio infrastructure.
- Planning phase coordination required to minimize disruptions.

Potential Impacts on Water Dams during Construction:

- Construction activities may disturb nearby water dams.
- Submission of final design for approval to relevant entities.

Potential Impacts on Nearby Wind Farms:

- Improper planning may affect nearby wind farms and avi-fauna migration corridors.
- Buffer distance considerations and coordination with relevant entities necessary.

Mitigation Measures:

Road Networks:

- Develop a Traffic and Transport Plan.
- Analyze transportation routes and worst-case scenarios.
- Coordinate with relevant authorities for compliance.

Civil and Military Aviation:

- Establish coordination with NREA and military aviation entities.
- Implement setback distances and regulatory requirements.

Petroleum Facilities:

- Coordinate with General Petroleum Company's head office for detailed design.
- Ensure compliance with coordination agreement requirements.

Water Resources:

- Coordinate with Ras Gharib Water Company for water supply.
- Secure water requirements through tankers.

Waste Utilities:

- Coordinate with water company for wastewater collection.
- Hire contractors for solid and hazardous waste collection.

Telecommunication and Television & Radio Links:

- Coordinate with NTRC to address infrastructure disruptions.
- Provide project details and obtain approval.

Water Dams:

- Submit final design for dam approval.
- Ensure coordination with relevant entities.

Nearby Wind Farms:

- Follow up with NREA to ensure appropriate buffer distances.
- Coordinate with relevant entities for approval.

Monitoring and Reporting Requirements:

- Submission of designs, plans and studies to the relevant entities
- Coordination with the relevant authorities.
- Implementation and monitoring of reviewed and approved plans; maintain coordination with relevant authorities

3.3.10 Socio-economic Conditions

The main impact anticipated on socio-economic conditions is related to potential job opportunities for local communities from the Project during construction and operation. However, such impacts are limited taking into account the nature of activities. No details are available at this stage on the number of job opportunities targeted to local communities, type of jobs, duration, etc.

Taking the above into account, the Project is committed to ensuring that priority for job opportunities are 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 Contractors and Operator, under supervision from the Project. The procedure will identify the number of job opportunities targeted for local communities and recruitment process will be undertaken through the Governorate's Labor Office. Based on that, the recruitment procedure will also include a selection process that is fair, transparent and provides equal opportunities for all including females.

In addition, the Project will also implement a Social Responsibility Program that will be implemented for the local communities based on their needs and requirements.

Potential Impacts Overview:

- Creation of job opportunities: 750 during construction phase and 20 jobs during operation phase.
- Potential procurement activities targeted towards local communities.
- Positive impacts expected on local economic activities and living environment.

Recommendations and Required Action:**Local Recruitment Procedure:**

- Develop a Local Recruitment Procedure to identify job opportunities for local communities, including skilled and unskilled workers and Bedouin groups.

- Ensure fair and transparent selection processes, equal opportunities for all, and collaboration with other wind farm developers in the area.
- Prioritize employment from the community and provide capacity building opportunities.
- Develop a Local Procurement Procedure to identify procurement opportunities for local communities, including subcontractors, supplies, and services.
- Ensure fair and transparent selection processes, equal opportunities for all, and collaboration with other wind farm developers in the area.
- Prioritize procurement opportunities from the community.

Social Responsibility Program:

- Implement a social responsibility program aiming to benefit local communities.
- Develop a structured approach to identify priority development projects based on needs assessment.
- Prioritize projects for local communities based on available budget, vision, timeline, and other factors.

Note: As the impacts discussed are mainly positive, no specific mitigation measures are identified. The focus is on enhancing positive impacts through recommended actions.

3.3.11 Occupational Health and Safety and Worker Accommodation

During the construction and operation phase there will be generic occupational health and safety risks to workers, such as working on construction sites, exposure electric shock hazards during maintenance activities, working at heights, etc. The ESIA requires that the Contractor and Operator prepare an Occupational Health and Safety Plan (OHSP) tailored to the Project's site and activities. Such plans aim to ensure the health and safety of all personnel in order to concur and maintain a smooth and proper progress of work at the site and prevent accident which may injure personnel. With the implementation of such measures the impact is considered not significant.

In addition, the Contractors will prepare a worker accommodation plan, which will define the 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. This could include impacts related to pressure on infrastructure, services and utilities, introduction of new reservoirs of diseases, inappropriate code of conduct by workers towards local communities, possible increase in social vices, and other.

Potential Impacts Overview:

- Anticipated impacts on occupational health and safety during both construction and operation phases of the wind farm.
- Risks to workers, including accidents and injuries, associated with onsite work activities.
- Impacts expected to be of medium magnitude and high sensitivity, primarily during the construction phase.

Mitigation Measures:

Occupational Health and Safety:

- Development of an Occupational Health and Safety Plan (OHSP) tailored to construction, installation, commissioning, and operation phases.
- OHSP to comply with national regulations and international standards, addressing roles and responsibilities, risk assessment, training, safety procedures, and COVID-19 protocols.
- Implementation of measures to ensure hazard elimination, engineering controls, and provision of Personal Protective Equipment (PPE).

Emergency Preparedness and Response:

- Preparation and implementation of an Emergency Preparedness and Response Plan.
- Establishment of emergency responder teams, emergency procedures, control measures, communication protocols, and worker training.
- Conducting emergency drills and coordination with external emergency response services.

Worker Grievance Mechanism:

- Development of a comprehensive worker grievance mechanism to address and resolve complaints.
- Establishment of a step-by-step process for lodging and handling grievances, including anonymous options, case handling, resolution monitoring, and close-out procedures.

Worker Accommodation:

- Compliance with national regulations and international best practices for onsite worker accommodation, if provided.
- Adherence to standards regarding living facilities, room facilities, medical facilities, and management of accommodation units.

Monitoring and Reporting Requirements:

- Inspection and reporting to ensure compliance with OHSP provisions and health and safety performance onsite.
- Reporting of accidents, incidents, emergencies, and measures taken to control and prevent reoccurrence.
- Inspection of worker accommodation, if applicable, to ensure compliance with health and safety standards.
- Submission of Emergency Preparedness and Response plan and Worker Grievance Mechanism for monitoring and review.

Note: Implementation of these mitigation measures is crucial to reducing the significance of residual impacts to not significant. Monitoring and reporting requirements are essential for ongoing assessment and improvement of health, safety, and worker accommodation standards.

3.3.12 Community Health, Safety, and Security

During construction and operation phase the main impacts on community health, safety and security include the noise, shadow flicker, trespassing by unauthorized personnel, and potential occurrence of incidences between site personnel and communities. These potential impacts are outlined below, accompanied by mitigation and monitoring measures in brief (full elaboration included in the ESIA).

Potential Impacts Overview:

Potential Impacts from Noise – Wind Turbine Operation

Wind turbines produce noise and cast shadows (known as shadow flicker) during operation. As the rotor blades rotate, shadows pass over the same point causing an effect known as ‘shadow flicker’. Both noise and shadow flicker could be a source of nuisances and disturbances. However, within the Project site and surrounding there are no sensitive receptors that could be affected by such impacts and therefore this is considered irrelevant.

Potential Impacts from Trespassing of Unauthorized Personnel:

Potential Impacts Overview:

- Trespassing of unauthorized personnel into the Project site could result in potential risks from several hazards of the various Project components.
- Unauthorized access to Project components poses safety hazards.
- Long-term impact during operation phase, moderate significance.

Mitigation Measures:

- Develop a Security Risk Assessment and implement security measures.
- Install locked doors on turbines, fence substations, and post informative signs. The detailed design the security measures are to prevent unauthorized access to the Project site to control any such impacts. This could include onsite security guards, fencing of some Project components (substation area), onsite surveillance and other.

Monitoring and Reporting Requirements:

- Submission of Security Risk Assessment.

Potential Impacts from Worker Influx during Construction:

Potential Impacts Overview:

- Inappropriate management of security issues and incidents by security personnel towards local communities could result in resentment, distrust and escalation of events.
- Influx of workers may introduce health risks, social issues and vices including inappropriate code of conduct (sexual exploitation and harassment (SEAH))
- Short-term impact during construction phase, minor significance.

Mitigation Measures:

- Nevertheless, a Security Management will be prepared which will identify appropriate measures for hiring, rules of conduct, training, equipping, and monitoring of security personnel to control and manage such issues.
- Implement a Worker Influx Plan addressing medical examinations, hygiene, and code of conduct.
- Provide induction training on contagious diseases and COVID-19 procedures.
- Development of a code of conduct for workers which takes into account appropriate behaviour by workers and EPC Contractor at all times, religious customs, traditional cultures and social norms in the area. In addition, it must include specifically requirements for social vices including gender-based violence, sexual harassment, alcoholism, drug abuse, etc.
- Induction training and awareness raising sessions on risks associated to the most common contagious diseases (e.g. influenza virus), communicable diseases, general measures for hygiene, code of conduct expected to be implemented and other as appropriate.

Monitoring and Reporting Requirements:

- Submission of the Worker Influx Plan
- Monitoring, Receipt and Follow-up of Incidence and Grievance mechanism

4. ENVIRONMENTAL & SOCIAL MANAGEMENT

The ESIA includes an Environmental and Social Management Plan (ESMP) which provides a high-level outline plan for managing and monitoring the environmental and social impacts during construction, operation and decommissioning of the Project. The ESMP identifies the mitigation measures which aim to eliminate and/or reduce the potential impact to acceptable levels and monitoring actions to ensure that the identified mitigation measures are implemented.

In addition, the development and implementation of an Environmental and Social Management System (ESMS) during the construction and operation is considered a key requirement under EBRD and IFC requirements. Therefore, IFP also prepared an ESMS Manual which includes 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 by the Contractors and Operator that will handle the key impacts and risks during construction and operation (e.g. air quality management plan, waste management plan, etc.)

Identification of an institutional framework to ensure that such plans and procedures 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 that ESMS requirements are implemented effectively;

Identification of a high-level framework for labour management that should be adhered to during the construction and operation phase; and

Identification of a strategy and commitment in relation to local hiring and community support initiatives.

ESMP: Planning and Construction Phase across Environmental Attributes and Impacts**Table 7: ESMP for the Planning and Construction Phase**

Environmental Attribute	Potential Impact	Measures	Code	KPI	Scope	Frequency	Oversight, Implementor
Landscape and Visual	Visual and landscape impacts due construction equipment and machinery.	Ensure proper general housekeeping and personnel management: (i) construction site is orderly at the end of each workday; (ii) equipment, and vehicles that are not in use should be removed and kept in locations to reduce visual impacts to the area. (iii) Ensure proper storage, collection, and disposal of waste streams	Mitigation	Visual inspections	At construction active areas	Daily / Weekly	EPC Contractor
Land Use	Potential for informal land use. This includes the Ghafra system of the Bedouin groups and existing petroleum facilities within the area.	(i) Coordinate with Bedouin Groups for inclusion and engagement in employment and procurement opportunities. (ii) Implement SEP that includes specific references for engagement and coordination with Bedouin groups.	Additional requirement	Signed agreement / MoM with Bedouin groups	Not applicable	Once before Initiation of construction	Developer
Geology, Hydrology and hydrogeology	Solid waste management	Coordinate with Ras Gharib City Council for the collection of solid waste from the site to the municipal approved dumpsite	Mitigation	Submitted contract	Not applicable	Once before commencement of construction	EPC Contractor
		Prohibit fly-dumping of any solid waste	Mitigation	Visual inspections	Active Construction Sites	Daily / weekly	
		Commitment to adherence to the waste hierarchy principle	Mitigation	Visual inspections	Active Construction Sites	Daily / weekly	
		Distribute litter bins and containers properly marked as "Municipal Waste"	Mitigation	Visual inspections	Active Construction Sites	Once before commencement of construction	

Environmental Attribute	Potential Impact	Measures	Code	KPI	Scope	Frequency	Oversight, Implementor
		Distribute a sufficient number of properly contained containers clearly marked as "Construction Waste" for the dumping and disposal of construction waste	Mitigation	Visual inspection	Active Construction Sites	Once before commencement of construction	
		Implement proper housekeeping practices	Mitigation	Visual inspections	Active Construction Sites	Daily / weekly	
		Maintain records of volumes of waste generated onsite, collected by contractor, and disposed	Mitigation	Submission of manifests	Not applicable	Throughout construction period	
	Wastewater management	Coordinate with Ras Gharib Water Company to hire a private contractor for the collection of wastewater from the site to the closest WWTP	Mitigation	Signed Contract	Not applicable	Once before commencement of construction	EPC Contractor
		Prohibit illegal disposal of wastewater to the land	Mitigation	Visual inspections	At construction active areas	Daily / weekly	
		Ensure that constructed septic tanks during construction and those to be used during operation are well contained and impermeable to prevent leakage of wastewater into soil	Mitigation	Visual inspections	At applicable area	Once before commencement of construction	
		Ensure that septic tanks are emptied and collected by wastewater contractor at appropriate intervals to avoid overflowing	Mitigation	Visual inspection	At applicable area	Daily/weekly	
		Maintain records and manifests that indicate volume of wastewater generated onsite, collected by contractor, and disposed of at the WWTP	Mitigation	Submission of manifests	Not applicable	Throughout construction period	
	Hazardous Waste	Hire approved private contractor for the collection of hazardous waste from the	Mitigation	Signed	Not applicable	Once before commencement	EPC Contractor

Environmental Attribute	Potential Impact	Measures	Code	KPI	Scope	Frequency	Oversight, Implementor
	Management	site to the approved hazardous waste disposal facilities		contract		nt of construction	
		Ensure that hazardous waste is disposed in a dedicated area that is enclosed, of hard surface, with proper signage and suitable containers as per hazardous waste classifications and that they are labelled for each type of hazardous waste	Mitigation	Visual inspections	At applicable area	Once before commencement of construction	
		Ensure hazardous waste storage area is equipped with spill kit, fire extinguisher and anti-spillage trays and a hazardous waste inventory is available	Mitigation	Visual inspections	At applicable area	Daily / weekly	
		Prohibit illegal disposal of hazardous waste to the land	Mitigation	Visual inspections	At construction active areas	Daily / weekly	
		Possibly contaminated water (e.g. runoff from paved areas) must be drained into appropriate facilities (such as sumps and pits). Contaminated drainage must be orderly disposed of as hazardous waste	Mitigation	Visual inspections	At construction active areas	Daily / weekly	
		Ensure that containers are emptied and collected by the contractor at appropriate intervals to prevent overflowing	Mitigation	Visual inspections	At construction active areas	Daily / weekly	
		Maintain records and manifests that indicate volume of hazardous waste generated onsite, collected by contractor, and disposed of at the hazardous waste disposal facilities	Mitigation	Submission of manifests	Not applicable	Throughout construction period	
	Hazardous material management	Hazardous materials are stored in an area that is of hard impermeable surface, flame-proof, accessible to authorized	Mitigation	Visual inspections	At applicable area	Once before commencement of	EPC Contractor

Environmental Attribute	Potential Impact	Measures	Code	KPI	Scope	Frequency	Oversight, Implementor
		personnel only, locked when not in use, and prevents incompatible materials from coming in contact with one another, and includes secondary containment systems				construction	
		Maintain a register of all hazardous materials used and accompanying MSDS must present at all times. Spilled material should be tracked and accounted for	Mitigation	Visual inspections	At applicable area	Daily / weekly	
		Incorporate dripping pans at machinery, equipment, and areas that are prone to contamination by leakage of hazardous materials (such as oil, fuel, etc.)	Mitigation	Visual inspections	At construction active areas	Daily / weekly	
		Maintenance activities and other activities that pose a risk for hazardous material spillage (such as refuelling) must take place at a suitable location (hard surface) with appropriate measures for trapping spilled material	Mitigation	Visual inspections	At construction active areas	Daily / weekly	
		Ensure that a minimum of 1,000 liters of general-purpose spill absorbent is available at hazardous material storage facility.	Mitigation	Visual inspections	At applicable area	Daily / weekly	
		If spillage on soil occurs, spill must be immediately contained, cleaned-up, and contaminated soil disposed as hazardous waste	Mitigation	Visual inspection	At applicable area	Upon occurrence	
	Erosion and runoff management	Avoid executing excavation works under aggressive weather conditions	Mitigation	Visual inspections	At construction active areas	Upon occurrence	EPC Contractor
		Place clear markers indicating stockpiling area of excavated materials to restrict	Mitigation	Visual inspections	At construction	Daily / weekly	

Environmental Attribute	Potential Impact	Measures	Code	KPI	Scope	Frequency	Oversight, Implementor
		equipment and personnel movement, thus limiting the physical disturbance to land and soils in adjacent areas			active areas		
		Erect erosion control barriers around work site during site preparation and construction to prevent silt runoff where applicable such as silt fences, gravel basins, fiber rolls, and other.	Mitigation	Visual inspections	At construction active areas	Daily / weekly	
		Return surfaces disturbed during construction to their original (or better) condition to the greatest extent possible	Mitigation	Visual inspections	At construction active areas	Upon occurrence	
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).	Implement Biodiversity Management Plan (BMP) which is provided as a standalone document.	Mitigation	Refer to BMP	At applicable area	Refer to BMP	EPC Contractor
		Undertake a detailed Egyptian Dabb Lizard survey through a biodiversity expert. The survey should focus on all construction activities areas and in particular the Wadi systems where such a species is likely to be located. Should burrows and/or records of this species be identified, relocation activities should be undertaken to nearby similar habitats.	Additional Survey	Submission of report	Prior to construction	Once; before construction	EPC Contractor
		Implement proper housekeeping practices on the construction site at all times	Mitigation	Visual inspections	At construction active areas	Daily / weekly	EPC Contractor
		Implement project induction for all workers on site and clearly mark (construction and habitat / botanical areas)	Mitigation	Training; visual inspections and site signage	Refer to BMP	Training – As needed	EPC Contractor

Environmental Attribute	Potential Impact	Measures	Code	KPI	Scope	Frequency	Oversight, Implementor
Birds (avi-fauna)	Construction activities could disturb existing habitats of birds breeding and/or nesting within the Project site.	Implement proper housekeeping practices on the construction site at all times	Mitigation	Visual inspections	At construction active areas	Daily / weekly	EPC Contractor
		Implement proper housekeeping practices on the construction site at all times	Mitigation	Visual inspections	At construction active areas	Daily / weekly	EPC Contractor
		Develop a protocol to swiftly report and dispose of any dead or injured wildlife or animals recorded onsite.	Mitigation	Submission of report	Prior to construction	Prior to construction	EPC Contractor
Archaeology and Cultural Heritage	Improper management of construction activities could disturb/damage archaeological remains which could be buried in the ground (if any).	As required by the SCA, SCA must be notified to to oversee the process	Mitigation	Submission of evidence of communication with SCA	Not applicable	Prior to construction	EPC Contractor
		Measures for construction activities to be halt upon discovery of archaeological finds; notify the Ministry of Tourism and Antiquities/Red Sea and Suez Antiquities Inspection Office. Work halts until confirmation clearance to resume the work is provided.	Mitigation	Visual inspections and submittal of chance find report	At applicable area	Upon occurrence	EPC Contractor
Air Quality and Noise	Probably increase in dust, particulate matter and pollutant emissions as well as noise which in turn will directly impact ambient air quality and noise levels.	If found to be excessive due to construction, the source of such emissions should be identified and adequate control measures must be implemented (as identified below)	Mitigation	Visual inspections	Active construction areas, nearby receptors and internal road networks	Upon occurrence	EPC Contractor
		Comply with the Occupational Safety and Health Administration (OSHA) requirements and the Egyptian Codes to provide PPE for workers to protect against dust and noise.	Mitigation	Visual inspections	At construction active areas	Daily / weekly	

Environmental Attribute	Potential Impact	Measures	Code	KPI	Scope	Frequency	Oversight, Implementor
		Apply basic dust control and suppression measures: (i) regular watering of roads; (ii) anticipate and manage dust-causing activities; (iii) manage stockpiles and excavated material via watering, containment, covering, bundling; (iv) cover trucks transporting aggregates and fine materials; (v) enforce site-speed limit of 15km/h	Mitigation	Visual inspections	At active construction areas	Daily / weekly	
		Develop a regular inspection and scheduled maintenance program for vehicles, machinery, and equipment for early detection to avoid unnecessary pollutant and noise emissions	Mitigation	Submission of maintenance program	Not applicable	Monthly	
		If noise levels were found to be excessive from construction activities, the source of such excessive noise levels should be identified and adequate control measures must be implemented	Mitigation	Visual inspections	At active construction areas and receptors to include petroleum storage facilities	Upon occurrence	
		Apply adequate general noise suppressing measures: well-maintained mufflers and noise suppressants for high-noise generating equipment and machinery, regular maintenance of all vehicles, machinery, and equipment.	Mitigation	Visual inspections	At construction active areas	Daily / weekly	
Infrastructure and Utilities	Traffic and transport management	Develop Traffic and Transport Plan to reduce risk of damage to the existing roads, highways, overpasses whilst ensuring public safety including analysis of the entire route; investigate	Additional study	Submission of Traffic and Transport Plan and approval from	Not applicable	Once before commencement of construction	EPC Contractor

Environmental Attribute	Potential Impact	Measures	Code	KPI	Scope	Frequency	Oversight, Implementor
		constraints along the highways and identify accommodations which need to be taken into account.		local authorities			
	Civil and Military Aviation	Provide information on the Project to relevant office and details of design to include setback distances if required (e.g. from radar systems if applicable) and navigational safety requirements (e.g. navigational lights, blade paintings, etc.)	Additional requirement	Submission of formal non-objection letter (or similar) with relevant entity	Not applicable	Once before commencement of construction	Developer
	Improper planning and design of project could affect petroleum facilities	Coordinate through NREA to the General Petroleum Company's head office in Cairo to discuss and determine requirements for the detailed design of the Project as well as coordination agreement requirement during the construction and operation phase (e.g. avoidance of areas, buffer distances to be considered, etc.)	Additional requirement	Coordination activities are initiated no less than six (6) months prior to construction Submission of formal communication letter (or similar) with relevant entity	Not applicable	Once before commencement of construction	Developer
	Water resources management	Coordinate with the Ras Ghareb Water Company to sector the water requirements of the Project	Additional requirement	Submission of formal communication letter (or similar) with Ras Ghareb Water Company	Not applicable	Once before commencement of construction	EPC Contractor

Environmental Attribute	Potential Impact	Measures	Code	KPI	Scope	Frequency	Oversight, Implementor
	Waste utilities	(i) coordinate with the Ras Ghareb Water Company to select authorized contractors for collection of wastewater from the site; (ii) coordinate with the Ras Gharib City Council to hire a private contractor for the collection of solid waste; and (iii) obtain list of authorized contractors for collection of hazardous waste	Additional requirement	Submission of formal communication letter with relevant entities	Not applicable	Once before commencement of construction	EPC Contractor
	Telecommunication and TV/Radio management	Coordinate through NREA/EETC to relevant entity and other applicable local agencies; provide information on the Project (location and specifications of turbines, etc.) and other requested requirements that may determine setback distances if required	Additional requirement	Coordination activities are initiated > (6) six months prior to construction Formal communication letter submitted	Not applicable	Once before commencement of construction	Developer
	Nearby Wind Farms	Further follow/communication with NREA to ensure if buffer distance of the Project from other nearby wind farm projects is sufficient	Mitigation	Submission of formal communication letter with relevant entities	Not applicable	Once before commencement of construction	Developer
	Petroleum Facilities	Coordinate with General Petroleum Company prior to Construction works	Mitigation	Submit formal communication letter to the relevant entities	Not applicable	Once before commencement of construction	Developer
Occupational Health and	There will be some generic risks to workers health and	Develop and submit an Occupational Health and Safety Plan (OHSP) that is	Additional study	Submission of OHSP plan	Not applicable	Once before commencement	EPC Contractor

Environmental Attribute	Potential Impact	Measures	Code	KPI	Scope	Frequency	Oversight, Implementor
Safety	safety from working on construction sites, as it increases the risk of injury or death due to accidents.	project and site specific to ensure the health and safety of all personnel in order to concur and maintain a smooth and proper progress of work at the site and prevent accident which may injure personnel or damage property.				nt of construction	
		Develop and submit an Emergency preparedness and Response Plan that is project- and site-specific, accounting for all potential emergency situations onsite to ensure the health and safety of all personnel and property onsite.	Additional study	Submission of EPRP	Not applicable	Once before commencement of construction	EPC Contractor
Human Rights	Inappropriate management of the workforce resulting in human right risks and violations by employing entities: EPC Contractor and Project Operator. This could include, but not limited to, engaging child workers, confiscation of passports of foreign workers, unsuitable working hours, and other.	Provide reasonable and lawful working conditions and terms of employment Recognize workers' rights to form and to join workers' organizations and to bargain collectively Prohibit child labour within the workforce Prohibition of forced labour Non-discrimination throughout the entire work cycle Provide equal opportunities for all throughout procurement and employment opportunities including women groups Management of daily workers, migrant workers and third-party workers	Mitigation	(i) Monthly inspections against the developed HR procedure (ii) Submission of HR inspection report that identifying corrective measures undertaken	At applicable area	Monthly	EPC Contractor
Public health and safety	Relatively large worker influx could result in H&S, Sexual exploitation and assault (SEA) issues such as	Submit a worker influx plan which takes into account the following: (i) medical examination program for workers; (ii) procedures to maintain hygienic	Additional study	Submission of worker influx plan	Not applicable	Once before commencement of	EPC Contractor

Environmental Attribute	Potential Impact	Measures	Code	KPI	Scope	Frequency	Oversight, Implementor
	risk of diseases, inappropriate code of conduct, social vices, etc.	conditions onsite; (iii) code of conduct for workers; (iv) induction training and awareness requirements for risk of diseases, etc; (v) consider impacts from workers migration into nearby communities including pressure on rental accommodations and infrastructures				construction	
	Mismanagement of security issues and incidents by personnel towards local communities, resulting in resentment, distrust and escalation of events	Develop Security Management Plan identifying measures for hiring, rules of conduct, training, equipping, and monitoring of security personnel to control and manage such issues	Additional study	Submission of security management plan	Not applicable	Once before commencement of construction	EPC Contractor
Socio-economics	The Project is expected to provide job opportunities for local communities. 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	Local Recruitment Procedure: announce the number of job opportunities for local communities to include skilled and unskilled workers, including fresh graduates engineers, technicians, labourers, etc and selection process that is transparent and non-discriminatory. Local Procurement Procedure: Prioritization of procurement from local communities in a transparent and non-discriminatory means from announcement to selection. Social Responsibility Program: the Developer is to implement an SRP to benefit the local communities in a structured approach that identifies priority development projects benefitting local communities (e.g. based on a needs assessment if available). Based on that	Recommendation	Regular reporting on outcomes of Program implementation	Not applicable	Continuous	Project Developer/EPC Contractors

Environmental Attribute	Potential Impact	Measures	Code	KPI	Scope	Frequency	Oversight, Implementor
		the SRP, projects can be prioritized based on available budget, company vision, timeline for implementation as well as other factors.					

ESMP: Operational Phase across Environmental Attributes and Impacts

Table 8: ESMP for the Operation Phase

Environmental Attribute	Potential Impact	Measures	Code	KPI	Scope	Frequency	Oversight, Implementor
Geology, Hydrology and hydrogeology	Solid waste management	Coordinate with Ras Gharib City Council for the collection of solid waste from the site to the municipal approved dumpsite	Mitigation	Submit contract	N/A	Once, Prior to operation	Project Operator
		Prohibit fly-dumping of any solid waste to the land	Mitigation	Visual inspections	At active areas	Daily / weekly	
		Distribute litter bins and containers properly marked as "Municipal Waste"	Mitigation	Visual inspections	At active areas	Once, Prior to operation	
		Implement proper housekeeping practices onsite at all times	Mitigation	Visual inspections	At active areas	Daily / weekly	
		Maintain records indicating volume of waste generated onsite, collected by contractor, and disposed of at the landfill	Mitigation	Submit manifests	N/A	Throughout operational period	
	Wastewater management	Coordinate with Ras Gharib Water Company to hire a private contractor for the collection of wastewater from the site to the closest WWTP	Mitigation	Submit contract	N/A	Once, Prior to operation	Project Operator
		Prohibit illegal disposal of	Mitigation	Visual inspections	At active	Daily / weekly	

Environmental Attribute	Potential Impact	Measures	Code	KPI	Scope	Frequency	Oversight, Implementor
		wastewater to the land			areas		
		Ensure that septic tanks are emptied and collected by wastewater contractor at appropriate intervals	Mitigation	Visual inspection	At applicable areas	Daily/weekly	
		Maintain records indicating volume of wastewater generated onsite, collected by contractor, and disposed of at the WWTP	Mitigation	Submit manifests	N/A	Throughout operational period	
	Hazardous waste management	Hire approved private contractor for the collection of hazardous waste (including electrical waste) to waste disposal facilities	Mitigation	Submit contract	N/A	Once, Prior to operation	Project Operator
		Ensure that hazardous waste is disposed in a dedicated, enclosed area, of hard surface and suitable, labelled containers for each classification of hazardous waste type	Mitigation	Visual inspections	At applicable areas	Once, Prior to operation	
		Ensure hazardous waste storage area is equipped with spill kit, fire extinguisher and anti-spillage trays and a hazardous waste inventory is available	Mitigation	Visual inspections	At applicable areas	Daily / weekly	
		Prohibit illegal disposal of hazardous waste to the land	Mitigation	Visual inspections	At active areas	Daily / weekly	
		Possibly contaminated water (e.g. runoff from paved areas) must be drained into appropriate facilities (such as sumps and pits). Contaminated drainage must be orderly disposed of as hazardous	Mitigation	Visual inspections	At active areas	Daily / weekly	

Environmental Attribute	Potential Impact	Measures	Code	KPI	Scope	Frequency	Oversight, Implementor
		waste					
		Ensure that containers are emptied and collected by the contractor on a regular basis	Mitigation	Visual inspections	At active areas	Daily / weekly	
		Maintain records of volumes hazardous waste generated onsite, collected by contractor, and disposed of at the hazardous waste disposal facilities	Mitigation	Submit manifests	N/A	Throughout operational period	
	Hazardous material management	Ensure that hazardous materials are stored in an area that is of hard impermeable surface, flame-proof, accessible to authorized personnel only, locked when not in use, and prevents incompatible materials from coming in contact with one another	Mitigation	Visual inspections	At applicable area	Once, Prior to operation	Project Operator
		Maintain a register of all hazardous materials used and accompanying MSDS must present at all times. Spilled material should be tracked and accounted for	Mitigation	Visual inspections	At applicable area	Daily / weekly	
		Incorporate dripping pans at machinery, equipment, and areas that are prone to contamination by leakage of hazardous materials (such as oil, fuel, etc.)	Mitigation	Visual inspections	At active areas	Daily / weekly	
		Maintenance activities and other activities that pose a risk for hazardous material spillage (such as refuelling) must take place at a suitable location (hard surface) with	Mitigation	Visual inspections	At active areas	Daily / weekly	

Environmental Attribute	Potential Impact	Measures	Code	KPI	Scope	Frequency	Oversight, Implementor
		appropriate measures for trapping spilled material					
		Ensure that a minimum of 1,000 litters of general-purpose spill absorbent is available at hazardous material storage facility.	Mitigation	Visual inspections	At applicable area	Daily / weekly	
		If spillage on soil occurs, spill must be immediately contained, cleaned-up, and contaminated soil disposed as hazardous waste	Mitigation	Visual inspection	At applicable area	Upon occurrence	
Biodiversity	Improper management of the site could disturb existing habitats (e.g. improper conduct and housekeeping practices).	Implement proper management measures to prevent damage to the biodiversity of the site.	Mitigation	Inspection	At applicable area	Continuous	Project Operator
Birds (avi-fauna)	Wind turbines are associated with impacts on birds from risks of strikes and collision on both migratory soaring birds and resident soaring birds in the area. Generally, such impacts depend on several factors but could affect the population levels of certain species especially those with international/national critical conservation status.	Avi-Fauna Monitoring and On-Demand Turbine Shutdown	Mitigation	Submission of report	At active areas	Continuous	Consultant
		Avi-Fauna Carcass Search during Operation	Additional requirement	Submission of report	At active areas	Continuous	
		Carcass Search Surveys	Additional requirement	Submission of report	At active areas	Continuous	
Bats	The potential impacts from the Project during operation are mainly related to risk of bat strikes and collisions with rotors of the operating wind	Undertake at height bat acoustic surveys for one (1) year during first or second year of operations. Such acoustic surveys will be done at the met masts and should be undertaken	Mitigation	Submission of report	At active areas	Once during operation	Project Operator

Environmental Attribute	Potential Impact	Measures	Code	KPI	Scope	Frequency	Oversight, Implementor
	turbines.	by a third-party entity with experience in bat assessments and studies.					
		Carcass Search Surveys	Mitigation	Submission of report	At active areas	Continuous	Consultant
Infrastructure and Utilities	Water resources management	Coordinate with the Ras Gharib Water Company to sector the water requirements of the Project.	Additional requirement	Submit formal communication letter (or similar) with Ras Gharib Water Company	N/A	Once before commencement of construction	Project Operator
	Waste utilities	Undertake the following: (i) coordinate with the Ras Gharib Water Company and obtain list of authorized contractors for collection of wastewater from the site; (ii) coordinate with the Ras Gharib City Council to hire a competent private contractor for the collection of solid waste from the site; and (iii) obtain list of authorized contractors for collection of hazardous waste from the site	Additional requirement	Submit formal communication letter with relevant entities	N/A	Once before commencement of construction	Project Operator
Occupational Health and Safety	There will be some generic risks to workers health and safety from working on construction sites, as it increases the risk of injury or death due to accidents.	Develop and submit an Occupational Health and Safety Plan (OHSP) that is project and site specific to ensure the health and safety of all personnel in order to concur and maintain a smooth and proper progress of work at the site and prevent accident which may injure personnel or damage property.	Additional study	Submit OHSP plan	N/A	Once, Prior to operation	Project Operator
Human Rights	Inappropriate management	Providing reasonable working	Mitigation	Submit HR	N/A	Monthly	EPC

Environmental Attribute	Potential Impact	Measures	Code	KPI	Scope	Frequency	Oversight, Implementor
	of the workforce during the construction phase could entail several human right risks and violations by employing entities such as the EPC Contractor and Project Operator. This could include but not limited to engaging child workers, confiscation of passports of foreign workers, unsuitable working hours, and other.	conditions and terms of employment to include but not limited to contract management, working hours, salaries/wages, annual and medical leaves, bereavement leaves, accommodation, etc.		inspection report with corrective measures undertaken			Contractor
		Recognizing workers' rights to form and to join workers' organizations and to bargain collectively	Mitigation	Submit HR inspection report with corrective measures undertaken	N/A	Monthly	
		Prohibition of child labour within the workforce	Mitigation	Submit HR inspection report with corrective measures undertaken	N/A	Monthly	
		Overall management of young workers within the labour force	Mitigation	Submit HR inspection report with corrective measures undertaken	N/A	Monthly	
		Prohibition of forced labour	Mitigation	Submit HR inspection report with corrective measures undertaken	N/A	Monthly	
		Non-discrimination throughout the entire work cycle in all its forms	Mitigation	Submit HR inspection report with corrective measures undertaken	N/A	Monthly	
		Providing equal opportunities for all	Mitigation	Submit HR	N/A	Monthly	

Environmental Attribute	Potential Impact	Measures	Code	KPI	Scope	Frequency	Oversight, Implementor
		throughout procurement and employment opportunities including women groups		inspection report with corrective measures undertaken			
		Overall management of daily workers, migrant workers and third-party workers	Mitigation	Submit HR inspection report with corrective measures undertaken	N/A	Monthly	
Public Health and Safety	Public access of unauthorized personnel to the various Project components.	A Security Risk Assessment should be developed for the Wind Farm Project and which takes into account the following: (i) each turbine to be fitted with locked doors to prevent unauthorized access to the turbines; (ii) substation area to be completely fenced with concrete walls to prevent unauthorized access; (iii) onsite guards; (iv) post informative signs on the turbines and substation about public safety hazards and emergency contact information, and other as applicable.	Additional study	Submit Security Risk Assessment	N/A	Once, Prior to operation	Project Operator
	Inappropriate management of security issues and incidents by security personnel towards local communities could result in resentment, distrust and escalation of events	Prepare a Security Management Plan that identifies appropriate measures for hiring, rules of conduct, training, equipping, and monitoring of security personnel to control and manage such issues	Additional study	Submit security management plan	N/A	Once, Prior to operation	Project Operator
	Blade or tower glint can impact nearby receptors in the area	Consideration should be given to the use of non-reflective finishes to ensure potential impacts are not	Mitigation	Visual inspection	Turbines	Once, Prior to operation	Project Operator

Environmental Attribute	Potential Impact	Measures	Code	KPI	Scope	Frequency	Oversight, Implementor
		significant					
Socio-economics	The Project is expected at a minimum to provide job opportunities for local communities. 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	Local Recruitment Procedure: announce the number of job opportunities for local communities to include skilled and unskilled workers, including fresh graduates engineers, technicians, labourers, etc and selection process that is transparent and non-discriminatory. Local Procurement Procedure: Prioritization of procurement from local communities in a transparent and non-discriminatory means from announcement to selection. Social Responsibility Program: the Developer is to implement an SRP to benefit the local communities in a structured approach that identifies priority development projects benefitting local communities (e.g. based on a needs assessment if available). Based on that the SRP, projects can be prioritized based on available budget, company vision, timeline for implementation as well as other factors.	Recommendation	Regular reporting on outcomes of Program implementation	N/A	Continuous	Project Developer/ Operator

5. STAKEHOLDER ENGAGEMENT PLAN (SEP)

A Stakeholder Engagement Plan (SEP) was developed which will be implemented for the Project. The SEP identifies in details the stakeholders that are relevant to the Project to include local communities, national governmental and permitting authorities, local government, Non-Governmental Organizations (NGOs) and other. The SEP identifies previous stakeholder engagement activities undertaken for the Project and the key outcomes of such engagement activities. This included in particular several entities such as Red Sea Governorate, Ras Gharib City Council, Bedouin Groups, General Petroleum Company and other. In addition, it also describes the outcomes of a public disclosure session that was undertaken in Ras Gharib City with local communities and other key local governmental entities.

The SEP also identifies in detail a future stakeholder engagement strategy and plan which identifies activities that will be undertaken throughout the Project duration, which provides an opportunity for all stakeholders, including local communities, to express their views and interact with the Project.

The SEP also includes a stakeholder grievance mechanism that is responsive to any concerns and complaints from affected stakeholders and communities.

6. ESIA DISCLOSURE & CONTACT DETAILS

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.

The disclosure package will include the following key documents that are available publicly in Arabic and English language.

- Environmental and Social Impact Assessment (ESIA) for the Wind Farm
- Non-Technical Summary (NTS)
- Stakeholder Engagement Plan (SEP)
- Cumulative Effect Assessment (CEA)
- Critical Habitat Assessment (CHA)
- Environmental and Social Management System (ESMS) Manual
- Environmental and Social Action Plan (ESAP)

The above documents are available at the following avenues:

- African Development Bank (AfDB) website (<http://www.afdb.org/>)
- Hard copies available at Red Sea Governorate and Ras Ghareb Local Governmental Unit

Ras Ghareb City Council

Location: Al-Mina Street

City: 11432 Ras Ghareb – Red Sea

Tel: 01001318480 – 01201958777

- Soft copies can also be made available to stakeholders via email to gawhara.abdelrahman@rasgharebwind.com

To communicate the outcomes of the above process, a public disclosure session will be announced and implemented to communicate with stakeholders.

An advertisement will be taken out in the national newspaper about the project, the availability of the disclosure package and the details about an upcoming disclosure event. The same will be done on the Project's website and LinkedIn. In addition, corresponding leaflets will be distributed in Ras Ghareb amongst the key stakeholders in the city, its Military Authorities, Governmental Institutions and the municipality.

The disclosure event will likely take the form of a Facebook Live event. A link and invite to this event will also be provided on the official page for Ras Ghareb city on Facebook. The event will also include a Q&A session. The whole event will be recorded and a summary report on the event and the Q&A session will be made available.