



Red Sea Wind Energy 500 MW Wind Farm Public Disclosure

07/12/2020



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07/10/2020

- 1 Project Introduction
- 2 Project Location
- 3 Project Overview
- 4 Project Corporate Social Responsibility
- 5 Project Changes Since February 2020

1 Project Introduction

- In 2013, the Arab Republic of Egypt (through the Ministry of Electricity and Renewable Energy) 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 electricity generated by the year 2035, of which 12% of wind power plants is foreseen, mostly in the Gulf of Suez (GoS) due to the wind characteristics in the area.
- In that respect, the Renewable Energy Law (Decree Law 203/2014) was issued to support the creation of a favorable economic environment for a significant increase in renewable energy investment in the country. The law sets the legal basis for the Build, Own and Operate (BOO) scheme to be implemented in which private investors are invited to submit their offers for solar and wind development projects.
- And then Presidential Decree No. 116 for year 2016 to assign New and Renewable Energy Authority (NREA) a land to establish and operate wind farms, to be built and operated by NREA or any companies owned by the private sector.
- Through the BOO mechanism, the Consortium that is incorporating Red Sea Wind Energy (RSWE), has been selected for the development of a 500 MW Wind Power Project in the Gulf of Suez.

1.1 Project's Sponsors

- The project's sponsors are ENGIE, Toyota Tsusho Corporation, Eurus Energy Holdings and Orascom Construction.
- The project's sponsors are the same sponsors of another wind farm (RGWE) of 262.5 MW in the Gulf of Suez area (GoS I project) which is already in operation since October 31st, 2019.



2 Project Location

- The Project is located in the Red Sea Governorate of Egypt, around 200 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 Ghareb Local Governmental Unit of the Red Sea Governorate, where the closest villages include Ras Ghareb (located 40 km to the southeast) and Zaafarana (45 km to the north).

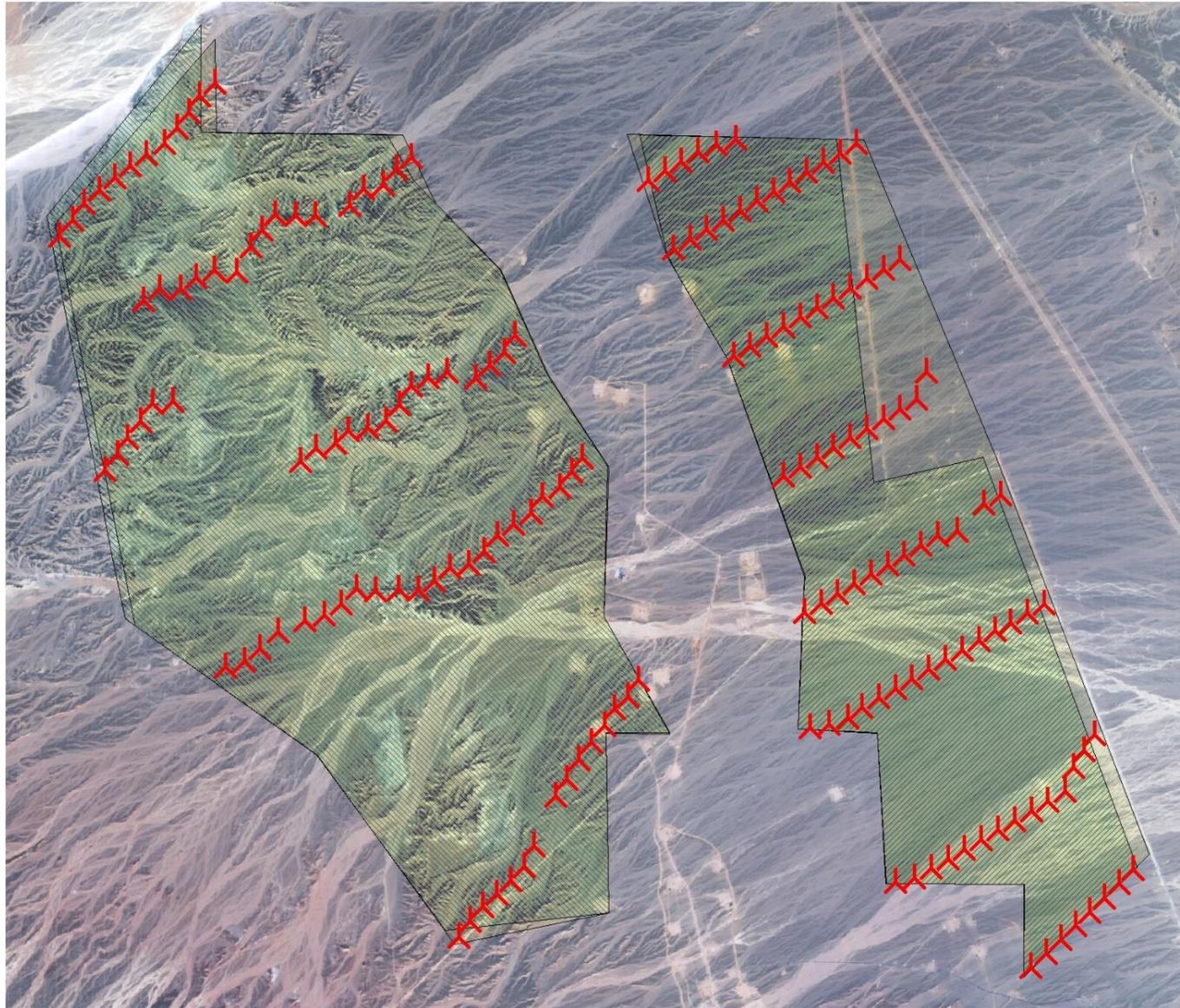


3 Project Overview

- The Project is expected to generation around 2,200– 2,400-Gigawatt Hour (GWh) of electricity per year.
- The Project will result in crucial positive environmental and economic impacts on the strategic, national, and local level. Such positive impacts underpin the rationale for the Project, and include :
 1. This development allows for **more sustainable development** and shows the commitment of the Government of Egypt to realizing its energy strategy and meeting the set targets for **renewable energy sources**;
 2. The Project will contribute to **increasing energy security** through reliance on an indigenous, inexhaustible and mostly import-independent energy resource. The expected electricity generation from the Project will serve the annual electricity needs of more than 800,000 local households;
 3. Generating electricity through wind power is **pollution-free during operation**. Compared with the conventional way of producing electricity in Egypt, the clean energy produced is expected to reduce consumption of liquid fuels and therefore reduce greenhouse gas emissions as well as

3.1 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:
 - 1. Wind Turbines:** For this Project this will include 173 wind turbines each with a generation capacity of 2.9 MW. Each turbine will have a hub-height of 63 m, rotor diameter of 114 m and therefore a tip height of 120 m.
 - 2. 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.
 - 3. Overhead transmission line (OHTL)** to transfer the produced electricity from the project's substation to the high-voltage national grid.



Project layout and distribution of the WTGs after changes made to meet the criteria of EEAA



EETC Transmission line route to transfer electricity from the project substation to the national grid.

3.2 General Overview

The Consortium intends to register the Project for a Certified Emission Reduction Program. Several options are being studied at the moment:

- The United Nations Framework Convention on Climate Change (UNFCCC) Clean Development Mechanism (CDM)
- The I-REC program
- Gold Standards

At a later stage it will be decided which standard to use.

4 Project Corporate Social Responsibility (CSR)

- CSR targets will be Education and Healthcare.
- Close cooperation with the RGWE CSR activities: such as renovation works at Ras Ghareb schools, scholarship program for students, medical devices to the Ras Ghareb Hospital.
- Long term commitment.
- Training program for substation operators and maintenance technicians from Ras Ghareb.

4.1 Project Job Opportunities

- Around 1,600 job opportunities at peak during the construction phase for a duration of approximately **30 months**. This will mainly include around 300 skilled job opportunities (to include engineers, technicians, consultants, surveyors, etc.) and 1,300 unskilled job opportunities (mainly labourers but will also include a number of security personnel).
- Around 40 job opportunities during the operation phase for a duration of **20 years**. This will include skilled job opportunities (such as engineers, technicians, administrative employees, etc.) and unskilled job opportunities (such as security personnel, drivers, etc.).

Taking the above into account, the Developer is aiming to hire local community members to the greatest extent possible throughout the construction and operation phase for skilled and unskilled jobs.

5 Project Changes Since February 2020

- The project has received the environmental permit from EEAA and the approvals of Environmental and Social Impact Assessment (ESIA) for the RSWE Wind Farm on October 25th 2020.
- Finalization of Environmental and Social Impact Assessment (ESIA) for the associated Overhead Transmission Line (OHTL).
- Project's Layout change to match the criteria of EEAA, i.e. further reducing the risk of bird collision during wind farm operation.
- The following key documents became available publicly in Arabic and English language:
 - Environmental and Social Impact Assessment (ESIA) for the RSWE Wind Farm
 - Environmental and Social Impact Assessment (EIA) for the associated Overhead Transmission Line (OHTL)
 - Critical Habitat Assessment (CHA)
 - Cumulative Effect Assessment (CEA)
 - Environmental and Social Management System (ESMS) Manual
 - Stakeholder Engagement Plan (SEP)
 - Draft Environmental and Social Action Plan (ESAP)
 - Non-Technical Summary (NTS)

The above documents are available in the following venues:

- (<http://www.rswe.co>) The documentation above will remain at the website for the life of the project.
- 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

5.1 ESIA for the associated Overhead Transmission Line (OHTL)

- The electricity from the Project will be evacuated from a substation located within the GOSII 500MW Wind Farm to the National Grid through an Overhead Transmission Line (OHTL) that will be developed by **Egyptian Electricity Transmission Company (EETC)**.
- The main component of the OHTL is the **transmission towers**, of which around 107 towers will be distributed along the route. The height of each tower will be around 50 m.
- The OHTL **route length** is around 35 km and part of the route will be parallel to existing and similar OHTLs.
- A **standalone Environmental and Social Impact Assessment (ESIA)** has been undertaken for the OHTL. The ESIA in general concludes that there are no key issues of concern. The key outcomes are as follows:
 - The ESIA proposes that bird diverters are installed on the OHTL to reduce bird collisions during operation given that, like the wind farm area, the OHTL route also runs within an area with high bird migration especially during spring season.
 - In addition, the ESIA also requires that on-site avifauna fatality monitoring is implemented as part of the Active Turbine Management Plan (ATMP) discussed earlier.

- The southernmost section of the OHTL enters into the Important Bird Area (IBA) of Gebel El Zeit – assessed to be Critical Habitat, for less than 400 meters. At this point the OHTL is located between two existing OHTLs. The OHTL ESIA has elaborated on the fact that the OHTL does not interfere with the main ecological functions and features that the IBA was identified for. These include the saltpan habitats of Sabkhet Ras Shikheir and the topography of Gebel El Zeit mountains, which forms a narrow corridor for migratory soaring birds. The OHTL ESIA has shown that both are located further south from the OHTL and the installation of the OHTL will not have impact on either.
- The Project will also support conservation objectives of the IBA and support the Migratory Soaring Birds Project managed by EEAA.
- The OHTL route runs within a key Wadi system in the area (Wadi Hawashiya). Therefore, ESIA recommends that a flood risk assessment is undertaken for the OHTL route to determine any design measures to be taken into account.
- Several road and electricity networks were noted near and/or intersect with the OHTL route. Therefore, ESIA recommends that discussions are undertaken between EETC and relevant entity to discuss OHTL route design and identify appropriate buffer distance requirements.
- Routine mitigation and management measures for waste management, dust and noise control, occupational health and safety, and chance find procedures to be implemented during construction and operation.

5.2 Critical Habitat Assessment (CHA)

A Critical Habitat Assessment (CHA) undertaken for the project site has identified a Critical Habitat (CH) in the vicinity of the project site, the Gebel El Zeit IBA. Globally-important concentrations of ten bird species migrate over the project site.

There is, however, no evidence from surveys that these species regularly use the Project area as a stop-over site in normal circumstances, or that this area is a particular bottleneck within the already-restricted flyway.

The **Project area is not considered to be Critical Habitat** although it appears to broadly be Natural Habitat although it is noted to be of low ecological significance and sensitivity.

Overall, one reptile and 11 migratory bird species are considered to be Priority Biodiversity Features. Such designation requires that the Project needs to ensure a no net loss of such biodiversity. This will be achieved through

- the Active Turbine Management Plan (ATMP) and turbine shutdown on demand, designed to avoid bird collisions, and
- pre-construction surveys and other controls to avoid impacts to the reptile

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. However, to control such impacts, an Active Turbine Management Plan (ATMP) will be implemented during the operation phase that will include:

- **Avi-Fauna Monitoring** and **On-Demand Turbine Shutdown** where during the migration seasons, daily onsite monitoring will be undertaken to shutdown turbine during risky situations to migrating birds to avoid collisions; and
- **Fauna Carcass Search** that will demonstrate the effectiveness of mitigation measures such as turbine shut down and allow an estimation of the annual number of bird deaths caused by the turbines.

5.3 Cumulative Effect Assessment (CEA)

- A Cumulative Effects Analysis (CEA) was carried out for the project site taking into consideration a wider area that includes the whole wind farm development area along the western coast of the Gulf of Suez.
- The analysis has identified **14 species**, which had an Overall Risk of Major or Moderate, and which are considered priority bird VECs for the projects in the study area.
- Fatality thresholds were identified for each priority bird VECs, by setting the point at which further loss is considered a risk to long-term viability of the population:
 - Out of the 14 species, 10 species were assigned to a zero-fatality threshold target.
 - The other 4 species were given a threshold ranging from 10 to 100 individuals per species.
- Building on the findings of the CEA, mitigation measures and monitoring actions are proposed, to be adopted by the RSWE project, and others that are proposed to be undertaken collectively and collaboratively by all wind energy developers across the study area. These mitigation and monitoring actions focus on the potential impacts to the 14 priority VECs and are based on industry good practice while building on the already existing experience of adaptive management at operational wind farms along the Gulf of Suez:
 - **On-site mitigation and monitoring methods**, to minimise collision risk, validate the effectiveness of proposed mitigation methods, allow estimation of residual impacts and provide information to adapt monitoring and mitigation to prevailing conditions; and,
 - **Collaborative efforts with other wind farm entities**, to minimise the cumulative effects of all the proposed wind farm developments in the study area.
- These measures and actions have already been included in the Project's ESIA.

5.4 Environmental and Social Management System (ESMS) Manual

The ESIA includes an Environmental and Social Management Plan (ESMP) which provides a high-level outline plan for **managing and monitoring** 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 EBRD and IFC requirement. Therefore, RSWE also prepared an ESMS Manual which includes the following:

- Identification of overall **ESMS structure and outline** that will be implemented during construction and operation;
- Identification and outline of the **key procedures and plans** to be developed at a later stage by the EPC Contractors and LTSA Contractor 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**.

5.5 Stakeholder Engagement Plan (SEP)

A Stakeholder Engagement Plan (SEP) has also been developed for the Project that will be implemented by RSWE.

- The SEP **identifies 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 Ghareb City Council, Bedouin Groups, General Petroleum Company and other.
- In addition, it also describes the outcomes of a **public disclosure session** (in February 2020) that was undertaken in Ras Ghareb 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.

5.6 Environmental and Social Action Plan (ESAP)

- An Environmental and Social Action Plan (ESAP) has been prepared to describe all necessary actions that should be taken by RSWE regarding the assessment and management of environmental and social impacts and issues, labour and working conditions, resource efficiency and pollution prevention and control, health and safety, biodiversity and living natural resources, and cultural heritage.
- The ESAP also specifies for each action the environmental & social risks (liabilities/benefits), the target and the evaluation criteria for successful implementation.

Q&A

Thank You!