

## EXECUTIVE SUMMARY OF THE 265.5 MW RAS GHAREB WIND ENERGY PROJECT LOCATED IN THE GULF OF SUEZ

### THE ENGLISH VERSION OF THE EXECUTIVE SUMMARY

The 262.5 MW wind energy project at Gulf of Suez is owned by Ras Ghareb Wind Energy S.A.E. (RGWE). RGWE is a new special purpose vehicle created by the project sponsors for this project. The project's sponsors are ENGIE, Toyota Tsusho, Eurus, Orascom Construction. EURUS and ENGIE are both sponsors with an extensive experience in renewable energy projects. The proposed project is the first CDM project undertaken by Ras Ghareb Wind Energy Company.

The project area is located on the western bank of the Gulf of Suez, 120 km North of Hurgada city and 10 to 15 km to the West Hurgada-Suez Road. The road distance to Cairo from the project is about 350 km. The project is one of the plots within a 1,000 MW planned project with a total area of 200 km<sup>2</sup> in Ras Ghareb, which in turn, is part of total area of 1229 km<sup>2</sup> allocated by the Egyptian government through a presidential decree of May 13th, 2009 for wind power generation. The wind power development is coordinated by the National Renewable Energy Authority (NREA).

The objective of the project is to build, own and operate (BOO) a 262.5 MW wind farm in Ras Ghareb on the Gulf of Suez with more than 60% of gross capacity factor, and hence, reduce CO<sub>2</sub> emissions by providing zero greenhouse gas (GHG) emission power generation source that would have otherwise been generated by fossil-fuel thermal power plants. The energy will be sold under a 20-year Power Purchase Agreement (PPA) to the Egyptian Electricity Transmission Company (EETC).

The first batch of wind turbines will be in operations by end March 2019. The complete wind farm is scheduled to reach COD by December 2019, but it may reach COD as early of October 2019. The project is compliant with local environmental laws in Egypt.

Globally, the project will have positive environmental impact through the reduction of CO<sub>2</sub> by about 600,000 ton CO<sub>2</sub>e /year and 12,600,000 ton CO<sub>2</sub>e over the projects' lifetime of 21 years. Emission reductions are achieved as a result of generating electricity using wind farms instead of fossil fuel thermal power plants. In addition, wind farms are one of the cleanest sources of renewable energy since they reduces the air and water pollution that would have otherwise been generated using the fossil fuel (conventional plants).

As to the local benefits, in addition to the reduction of CO<sub>2</sub> emissions, the project will help Egypt in achieving its sustainable development goals, which include increasing the share of renewables in the energy generation mix which is targeted to reach 20% by 2022 with an installed capacity of 7 GW of wind-power. Moreover, the project will help in improving the local air quality by displacing fossil fuel power plants and their accompanying harmful emissions such as SO<sub>2</sub> and NO<sub>x</sub> with their associated harmful effects, especially SO<sub>2</sub> emissions that cause severe respiratory illness, damage to materials, structures and crops.

The following are the possible direct effects of the project on the local community:

- Oil production is the main economic activity in the city of Ras Ghareb where the project is located. Thus, the project will introduce new economic activity in the city and will offer new job opportunities to the local community. The project will also encourage and increase the foreign investment in Egypt that, in turn, stimulates economic development.
- As part of its corporate and social responsibility Ras Ghareb Wind Energy will perform social activities for the benefit of Ras Ghareb community. The main axes of its engagement will be education and health.
- The project will additionally reduce financial burden on the government that subsidizes fossil fuels used in electricity generation.
- The project will contribute in providing the electricity necessary for developing the touristic villages near the red sea coast, since this area is considered one of the most attractive places for tourism.
- The project will add to Egypt's mix of renewable energy and will provide more energy stability that can revive the operation of different industries. More importantly, the project will provide clean source of energy that shall contribute in the reduction of GHG emissions leading in turn to a sustainable and cleaner economic development.

For the baseline methodology, the project will use the approved existing baseline methodology ACM0002: "Consolidated baseline methodology for grid-connected electricity generation from renewable sources". It is applied to the project activity.

A point of concern for wind-power installations is bird migration from Europe to Africa, across Egypt. The Gulf of Suez region is a pathway of birds migrating from eastern and Western Europe to the warm regions in east and central Africa in autumn, and back in spring. In order to reduce the expected risk of collision and barrier effects for migrating birds at wind farms an effective Shutdown Program has to be developed and established for the spring migration period.