## SECTION A. Description of project activity

### A.1. Purpose and general description of project activity

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Vish Wind Infrastructure LLP ("VWIL") is developing 50.4 MW wind power project at Kutch and Lalpur sites of Kutch and Jamnagar districts respectively, in the state of Gujarat in India. The project consists of 63 machines of Enercon make E-53 type Wind Energy Converters (WECs) of 800 KW capacities each. Annually, the project is expected to generate and supply 106,696.80 MWh of electricity to the state electricity grid, which is a part of the NEWNE (Northern, Eastern, Western and North-Eastern) grid in India. The project will thus address the demand –supply gap in the state of Gujarat and will assist the sustainable growth, conservation of resources and reduction of greenhouse gas emissions by using renewable energy source like wind energy.

*Purpose of the project activity:*

The purpose of the project activity is to generate emission free and environment friendly electricity from the wind energy potential available in the region. The amount of electricity generated from the project activity will be supplied to the Western regional Grid of India, which is a part of the Integrated NEWNE grid of India.

The project activity will contribute towards reduction of greenhouse gas (G HG) emission from the atmosphere, which is estimated to be approximately 101,234 tCO2e per year, by displacing an equivalent amount of electricity generation through the operation of existing fuel mix in the grid comprising mainly fossil fuel based power plants. Thus, the project will not only reduce the demand-supply gap of the respective grid, but also will help in reducing other pollutants like SOx, NOx, etc. from the atmosphere.

In the absence of the project activity the equivalent amount of electricity would have been generated from the connected/ new power plants in the 'Northern Eastern Western North-Eastern' NEWNE grid, which are/ will be predominantly based on fossil fuels . This is also the pre-project scenario.

The technology employed for the project is well proven and safe. Enercon (India) Limited (hereinafter referred as "Enercon") is the equipment supplier and the Operation and Maintenance contractor for the Project.

**Contribution to Sustainable Development**

The four indicators of sustainable development have been stipulated by the National CDM Authority (NCDMA), the Designated National Authority (DNA) for Government of India (GoI), under their approval guidelines for Clean Development Mechanism (CDM) projects from India[1]. The project activity will contribute towards the sustainable development indicators as follows:

***Social well being:***

- The project activity will contribute to socio-economic development through improving the infrastructure for road network and other mode of communications in the remote part of the state during both the construction and operational period.

***Environmental well being:***

[1] http://www.cdmindia.gov.in/approval_process.php

- The project activity will utilize renewable energy source for electricity generation instead of fossil fuel based electricity generation which would have emitted gaseous, liquid and/or solid effluents/wastes. Thus, the project causes no negative impact on the surrounding environment and contributes to environmental well-being.

- The project activity will contribute towards reduction of the GHG emissions as well as emission of pollutants like SOx, Suspended Particulate Matters (SPMs) etc. by avoiding equivalent amount of power generation from fossil fuel based power plants.

***Economic well being:***

- The project will generate electricity utilizing renewable source like wind, thus will increase the contribution of renewable based power generation in the region and will also help in reducing the demand - supply gap of the respective grid.

- The project activity involves substantial amount of investment, thus will contribute towards generation of direct and indirect employment opportunities as per the requirement of the skilled and semi-skilled manpower.

- Use of a renewable source of energy reduces the dependence on imported fossil fuels and associated price variation, thereby leading to increased energy security.

***Technological well being:***

- Increased interest in wind energy projects will further push R&D efforts by technology providers to develop more efficient and better machinery in future.

In addition to this, the project proponent (PP) will contribute 2% of the CDM revenue realized from the CDM project activity for sustainable development including society / community development. The PP is aware about the guideline of Indian DNA on commitment of 2% of the CDM revenues towards sustainable development and a formal undertaking will be submitted accordingly to the DNA.

**A.2. Location of project activity**

**A.2.1. Host Party(ies)**

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India

**A.2.2. Region/State/Province etc.**

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Western Region/State - Gujarat

**A.2.3. City/Town/Community etc.**

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District: Kutch and Jamnagar

**A.2.4. Physical/Geographical location**

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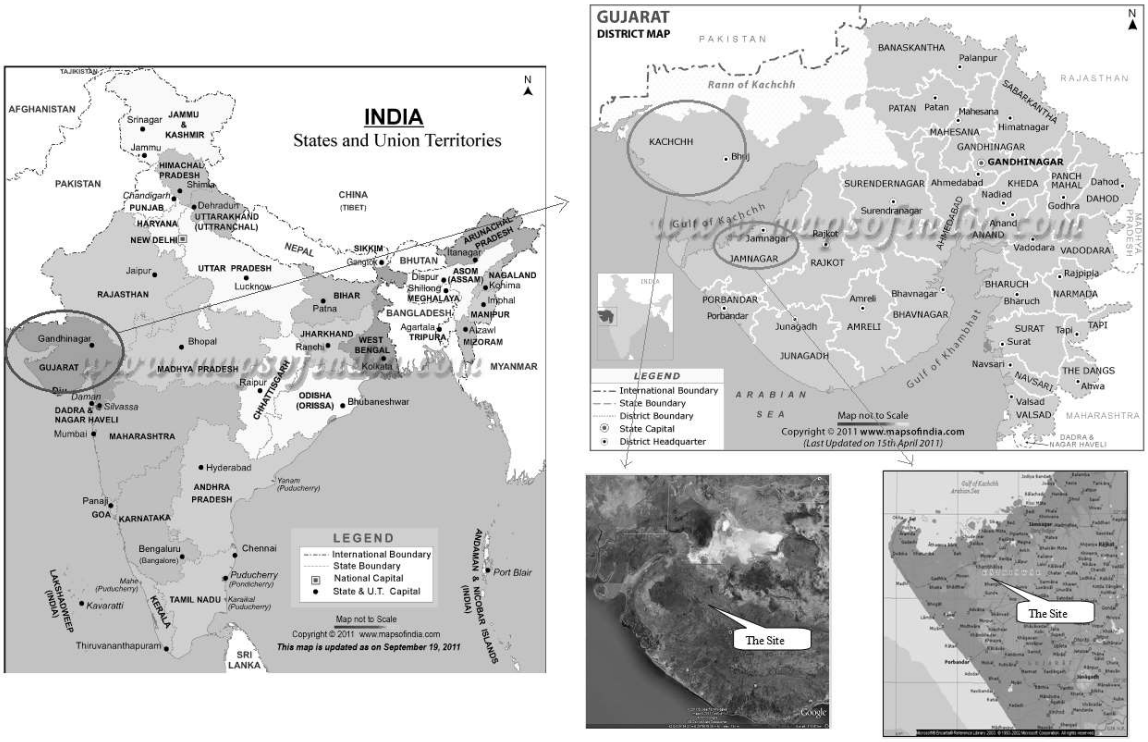
The project activity is located at Kutch and Lalpur site in Kutch & Jamnagar district respectively, in the state of Gujarat, India. The nearest railway station and airport for Kutch site is Rajkot and the nearest railway station and airport for Lalpur site is Jamnagar. The latitude and longitude details along of each WEGs is provided in Annex 1.

The location of the project site has been shown below:




**A.3. Technologies and/or measures**

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The project activity involves 63 numbers wind energy converters (WECs) of Enercon make (800 KW, E-53) with internal electrical lines connecting the project activity with local evacuation facility. The WECs generate 3-phase power at 400V, which is stepped up to 33 KV. The project activity can operate in the frequency range of 48.5–51.5 Hz and in the voltage range of 400 V ± 12.5%. The average life time of the WEC is around 20 years as per the equipment supplier specifications. The other salient features of the state-of-art-technology are:

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| Turbine model | Enercon (E- 53) |
| Rated power | 800 KW |
| Rotor diameter | 52.9 m |
| Hub height | 75 m (Concrete) |
| Turbine Type | Direct driven, horizontal axis wind turbine with variable rotor speed |
| Power regulation | Independent pitch system for each blade. |
| Cut in wind speed | 2.5 *m/s* |
| Rated wind speed | 12 *m/s* |
| Cutout Wind speed | 28-34 m/s |
| Extreme Wind Speed | 59.5 *m/s* |
| Rated rotational speed | 29 rpm |
| Operating range rot. speed | 12-29 rpm |