Monitoring Report

CARBON OFFSET UNIT (CoU) PROJECT

Title: 15 MW Wind Energy Project in Maharashtra

Version 2.0

Date 19/01/2022

First CoU Issuance Period: 03years, 02 months

Monitoring Period: 24/10/2018 to 31/12/2021

Monitoring Report (MR)
CARBON OFFSET UNIT (CoU) PROJECT

Monitoring Report	
Title of the project activity	15 MW Wind Energy Project in Maharashtra
UCR Project Registration Number	051
Version	2.0
Completion date of the MR	19/01/2022
Monitoring period number and duration of this monitoring period	Monitoring Period Number: 01 Duration of this monitoring Period: (first and last days included (24/10/2018 to 31/12/2021)
Project participants	M/s D.J. Malpani
Host Party	India
Applied methodologies and standardized baselines	AMS.I.D – Grid connected renewable electricity generation (Version 18.0)[1]
Sectoral scopes	01 Energy industries (Renewable /Non Renewable Sources)
Estimated amount of GHG emission reductions for this monitoring period in the registered PCN	2018: 743 CoUs (743 tCO2eq)
	2019: 20,400 CoUs (20,400 tCO2eq)
	2020: 14,210 CoUs (14,210 tCO2eq) 2021: 15,769 CoUs (15,704 tCO2eq)
Total:	51,057 CoUs (51,057tCO2eq)

SECTION A. Description of project activity

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

The project “15 MW Wind Energy Project in Maharashtra” is located in village Mandal Akhatwade, Dhavlivihir, Tane, Isharde Tehsil Nandurbar, Sakri, District Nandurbar, Dhulia, State Maharashtra, Country India.

a) Purpose of the project activity and the measures taken for GHG emission reductions >>

The main purpose of the project activity is the implementation and operation of 15 MW wind farms to generate electricity in high wind speed areas of Maharashtra. M/s D. J. Malpani (DJM) is the promoter of these wind farms. The project activity consists of 12 wind electric generators (WEGs) installed in three phases at various locations within Maharashtra. The generated electricity from WEGs is connected to state electric utility namely Maharashtra State Electricity Distribution Company Limited (MSEDCL) and transmitted through state electric grid.
The project implementation schedule is placed below:

Capacity	WTG Location No	WTG Supplier	Location	Date of Commissioning
1.25 MW	K 413		Mandal,Nandurbar	26-03-2006
1.25 MW	K 407	Suzlon Energy Pvt. Ltd.	Mandal Nandurbar	06-03-2006
1.25 MW	K 402		Akahtwade, Nandurbar	06-02-2006
3.75 MW	K400,K401&K412		Mandal, Nandurbar	31-12-2005
1.25MW	K 254		Dhavivhir, Dhule	31-03-2006
1.25 MW	J 115		Isharde, Dhule	24-08-2006
2.5 MW	J114,& J128		Isharde, Dhule	13-08-2006
1.25 MW	J 127		Isharde, Dhule	16-08-2006
1.25 MW	K 118		Titane, Dhhule	29-03-2006

The project replaces anthropogenic emissions of greenhouse gases (GHGs) 51,057 tCO_2e there on displacing 56730.189 MWh amount of electricity from the generation mix of power plants connected to the Indian electricity grid, which is mainly dominated by the thermal / fossil fuel-based power plant.
The project activity is the installation of a new grid connected renewable power plant/unit. The scenario existing prior to the implementation of the project activity is electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid connected power plants and by the addition of new generation sources. Baseline scenario and scenario existing prior to the implementation of the project activity are both same.

b) Brief description of the installed technology and equipment>>

All the machines are S70 make and have been developed by Suzlon Energy Ltd. (SUZLON) in association with its collaborators using state of the art technology. The primary driver for the development of the turbines was Suzlon’s commitment to make wind energy more accessible - in terms of technology, yield and cost.

In wind energy generation, kinetic energy of wind is converted into mechanical energy and subsequently into electrical energy. Wind has considerable amount of kinetic energy when blowing at high speeds. This kinetic energy when passes through the blades of the WEG is converted into mechanical energy and rotates the wind blades. When the wind blades rotate, the connected generator also rotates, thereby producing electricity. The technology is a clean technology since there are no GHG emissions associated with the electricity generation.

The important parts of a windmill are:

Main Tower

This is a very tall structure with a door and inside ladder at the bottom. The door is used to enter into the tower for operation and maintenance.

Blades

The WEGs are provided with three blades. The blades are self supporting in nature made up of Fiber Reinforced Polyester. The blades are mounted on the hub.

Nacelle

The Nacelle is the one which contains all the major parts of a WEG. The nacelle is made up of thick rugged steel and mounted on a heavy slewing ring. Under normal operating conditions, the nacelle would be facing the upstream wind direction.

Hub

The Hub is an intermediate assembly between the wing and the main shaft of the wind turbine. Inside the hub, a system to actuate the aerodynamic brake is fitted. The hub is covered with nose cone.

Main Shaft

The shaft is to connect the gear box and the hub. Solid high carbon steel bars or cylinders are used as main shaft. The shaft is supported by two bearings.

Gear Box, Bearing and Housing

The gearbox is used to increase the speed ratio so that the rotor speed is increased to the rated generator speed. Oil cooling is employed to control the heating of the gearbox. Gearboxes are mounted over dampers to minimize vibration. The main bearings are placed inside housing.

Brake

Brake is employed in the WEGs to stop the wind turbine mainly for maintenance check. Brakes are also applied during over speed conditions of the wind turbine. The brakes are placed on the high speed shaft.

Generator

The generator uses induction type of generator. The generators are provided with monitoring sensors in each phase winding to prevent damage to the generators.

Technical Details of 1.25 MW (S 70) WTG

Sr. No.	Particulars	Specifications
1.	Rotor diameter	69.1 m
2.	Hub height	74 m
3.	Installed electrical output	1250 kW
4.	Cut-in wind speed	3 m/s
5.	Rated wind sped	12 m/s
6.	Cut-out wind speed	20 m/s

7.	Rotor swept area	3750 m^2
8.	Rotational speed	13.2/19.8
9.	Rotor material	GRP
10.	Regulation	Pitch
11.	Generator	Asynchronous Generator, 4/6 poles
12.	Rated output	250/1250 kW
13.	Rotational speed	1010/1515 rpm
14.	Operating voltage	690 V
15.	Frequency	50 Hz
16.	Protection	IP 56
17.	Insulation class	H
18.	Cooling system	Air cooled
19.	Gear box	3 stage gear box, 1 planetary and 2 helical
20.	Manufacturer	Winenergy
21.	Gear ratio	77.848
22.	Nominal load	1390 kW
23.	Type of cooling	Oil cooling system
24.	Yaw drive system	4 active electrical yaw motors
25.	Yaw bearing	Polymide slide bearing
26.	Safety system	
26.1	Aerodynamic brake	3 times independent pitch regulation
26.2	Mechanical brake	Spring power disc brake, hydraulically released, fail safe.
27.	Control unit	Microprocessor controlled, indicating actual operating conditions, UPS back up system
28.	Tower	Tubular
29.	Design standards	GL/IEC

Date of UCR Project Authorization: 24/10/2021
Start Date of Crediting Period: 24/10/2018
Project Commissioned: Detailed below

Capacity	**WTG No**	**Location**	**Date of Commissioning**
3.75 MW	K 400, K401, K 412	Mandal Nandurbar	31-12-2005
1.25 MW	K 402	Akahtwade	06-02-2006
1.25 MW	K 407	Mandal Nandurbar	06-03-2006
1.25 MW	K 413	Mandal Nandurbar	26-03-2006
1.25MW	K 118	Titane, Dhhule	29-03-2006
1.25MW	K 254	Dhavivhir, Dhule	31-03-2006
2.5 MW	J114,& J128	Isharde, Dhule	13-08-2006
1.25MW	J 127	Isharde, Dhule	16-08-2006
1.25MW	J 115	Isharde, Dhule	24-08-2006
1.25MW	K 118	Titane, Dhhule	29-03-2006

d) Total GHG emission reductions achieved or net anthropogenic GHG removals by sinks achieved in this monitoring period>>

The total GHG emission reductions achieved in this monitoring period is as follows:

Summary of the Project Activity and ERs Generated for the Monitoring Period

Start date of this Monitoring Period	24/10/2018
Carbon credits claimed up to	31/12/2021
Total ERs generated (tCO_{2eq})	51,057 tCO2eq
Leakage	0

e) Baseline Scenario>>

In the absence of the project activity, the equivalent amount of electricity would have been imported from the regional grid (which is connected to the unified Indian Grid system (NEWNE Grid)), which is carbon intensive due to predominantly sourced from fossil fuel-based power plants. Hence, baseline scenario of the project activity is the grid-based electricity system, which is also the pre project scenario.

A.2. Location of project activity>>

Country: India
District: Nandurbar, Dhule
Village: Mandal, Akhatwade (Nandurbar), Dhavlivihir, Tane, Isharde (Sakri)
Tehsil: Nandurbar, Sakri
State: Maharashtra
Pincode: Nandurbar – 425412, Sakri - 424304

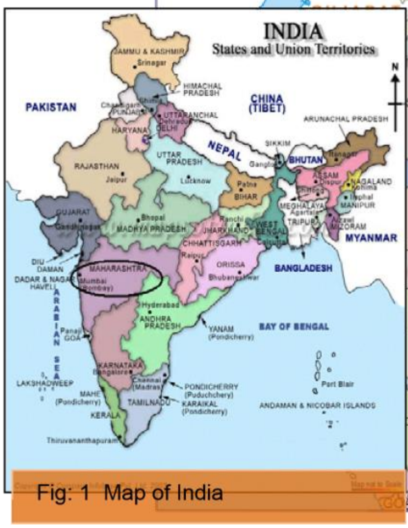

Fig: 1 Map of India

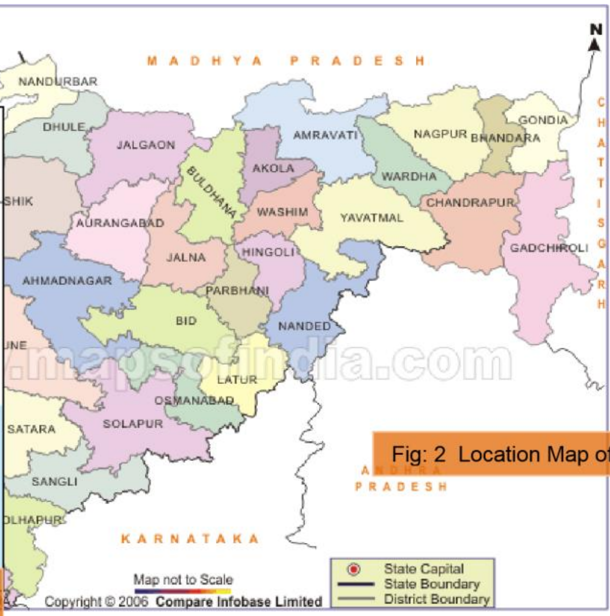

Fig: 2 Location Map of project activity

The unique location of individual wind turbines are:

PHASE	WINDMILL LOCATION NO.	ADDRESSES	Latitude	Longitude
Phase – I	K 400	Gut No. 168/4/P, Village- Mandal, Taluka- Nandurbar, Dist.: Nandurbar	21 21′57.29″ N	7414′27.60″E
Phase – I	K 401	Gut No. 161/1A/1, Village- Mandal, Taluka- Nandurbar, Dist.: Nandurbar	21 21′57.29″ N	7414′27.60″E
Phase – I	K 402	Gut No. 46/P, Village- Akhatwade, Taluka- Nandurbar, Dist.: Nandurbar	21 21′57.29″ N	7414′27.60″E

Phase – I	K 407	Gut No. 370/1/P, Village- Mandal, Taluka- Nandurbar, Dist.: Nandurbar	21 21´57.29″ N	7414´27.60″E
Phase – I	K 412	Gut No. 375/1/P, Village- Mandal, Taluka- Nandurbar, Dist.: Nandurbar	21 21´57.29″ N	7414´27.60″E
Phase – I	K 413	Gut No. 378/1B/P, Village- Mandal, Taluka- Nandurbar, Dist.: Nandurbar	21 21´57.29″ N	7414´27.60″E
Phase – II	K 254	Gut No. 74/1A/P, Village- Dhavlivihir, Taluka- Sakri, Dist.: Dhulia	20 59´25.01″N	7418´51.54″E
Phase – II	K 118	Gut No. 43/1, Village- Titane, Taluka- Sakri, Dist.: Dhulia	20 59´25.01″N	7418´51.54″E
Phase – III	J 114	R.S. No.16, Village- Isharde, Taluka- Sakri, Dist.: Dhulia	20 59´25.01″N	7418´51.54″E
Phase – III	J 115	R.S. No.16, Village- Isharde, Taluka- Sakri, Dist.: Dhulia	20 59´25.01″N	7418´51.54″E
Phase – III	J 127	R.S. No.16, Village- Isharde, Taluka- Sakri, Dist.: Dhulia	20 59´25.01″N	7418´51.54″E
Phase – III	J 128	R.S. No.16, Village- Isharde, Taluka- Sakri, Dist.: Dhulia	20 59´25.01″N	7418´51.54″E

A.3. Parties and project participants >>

Party (Host)	Participants
India	M/s D.J. Malpani

A.4. References to methodologies and standardized baselines >>

SECTORAL SCOPE – 01 Energy industries (Renewable/Non-renewable sources)

TYPE I – Renewable Energy Projects

CATEGORY- AMS. I.D. – Grid connected renewable electricity generation (Version 18.0)3

Indicate the exact references titles,and reference numbers) of:
The applied methodologies (e.g. AMS. I.E. Switch from Non-Renewable Biomass for Thermal Applications by the User and AMS-I.C.: Thermal energy production with or without electricity ") ;

A.5. Crediting period of project activity >>

Type: Renewable
State date: 24/10/2018
Length of the crediting period corresponding to this monitoring period: 3 years 02 months – 24/10/2018-31/12/2021

A.6. Contact information of responsible persons/entities>>

Name: Manish Dabkara
Email: registry@enkingint.org
Phone: +91 990734900

SECTION B. Implementation of project activity

B.1. Description of implemented registered project activity >>

a) Provide information on the implementation status of the project activity during this monitoring period in accordance with UCR PCN>>

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b) For the description of the installed technology(ies), technical process and equipment, include diagrams, where appropriate>>

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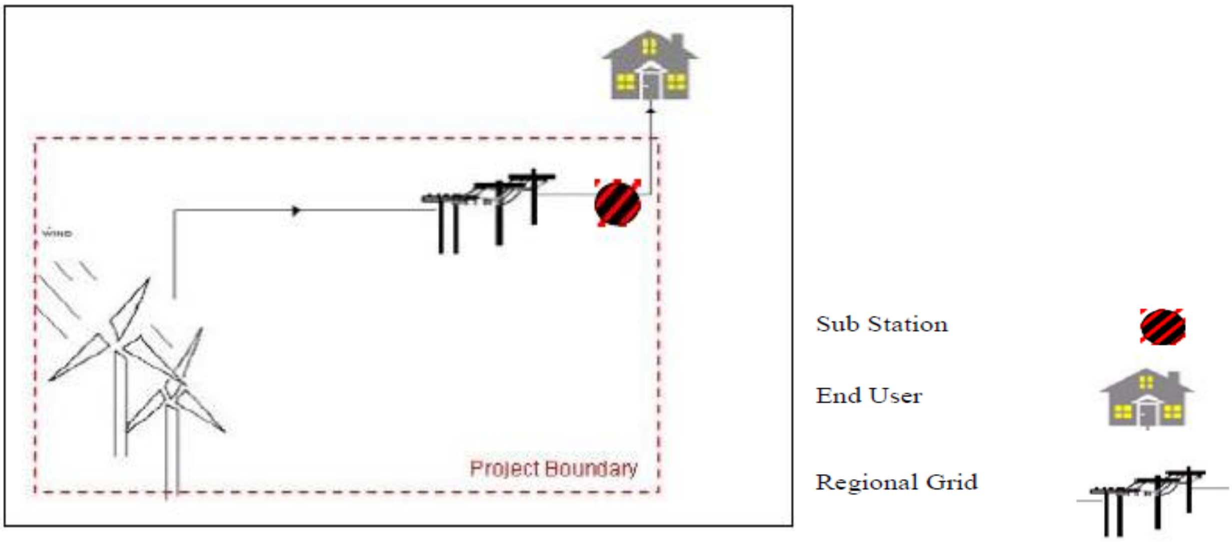
27.	Control unit	Microprocessor controlled, indicating actual operating

		conditions, UPS back up system
28.	Tower	Tubular
29.	Design standards	GL/IEC

The project boundary includes the physical, geographical site(s) of:



B.2. Do no harm or Impact test of the project activity>>

There are social, environmental, economic and technological benefits which contribute to sustainable development.

Rational: As per 'Central Pollution Control Board (Ministry of Environment & Forests, Govt. of India)', final document on revised classification of Industrial Sectors under Red, Orange, Green and White Categories (07/03/2016)1, it has been declared that wind project activity falls under the "White category". White Category projects/industries do not require any Environmental Clearance such as 'Consent to Operate' from PCB as such project does not lead to any negative environmental impacts. Additionally, as per Indian Regulation, Environmental and Social Impact Assessment is not required for Wind Projects.

Contribution of project activity to sustainable development:
The Government of India has stipulated following indicators for sustainable development in the interim approval guidelines for such projects which are contributing to GHG mitigations. The Ministry of Environment, Forests & Climate Change, has stipulated economic, social, environment and technological well-being as the four indicators of sustainable development. It has been envisaged that the project shall contribute to sustainable development using the following ways:
Social well-being:

- Social well-being is assessed by contribution by the project activity towards improvement in living standards of the local community.
- The project activity has resulted in increased job opportunities for the local population on temporary and permanent basis.
- Manpower was required both during erection and operation of the wind farms. This has resulted in poverty alleviation of the local community and development of basic

[1] http://moef.gov.in/wp-content/uploads/2017/07/Latest_118_Final_Directions.pdf

infrastructure leading to improvement in living standards of the local population.

Economic well being

- The project activity has created direct and indirect job opportunities to the local community during installation and operation of the WEGs.
- The investment for the project activity has increased the economic activity of the local area.
- The project activity also contributes in economic well-being of the nation's economy by reducing import of fossil fuel for electricity generation in hard currency.

Environmental well being

- The project utilizes wind energy for generating electricity which otherwise would have been generated through alternate fuel (most likely - fossil fuel) based power plants, contributing to reduction in specific emissions (emissions of pollutant/unit of energy generated) including GHG emissions.
- As wind power projects produce no end products in the form of solid waste (ash etc.), they address the problem of solid waste disposal encountered by most other sources of power.
- Being a renewable resource, using wind energy to generate electricity contributes to resource conservation. Thus the project causes no negative impact on the surrounding environment.

Technological well being

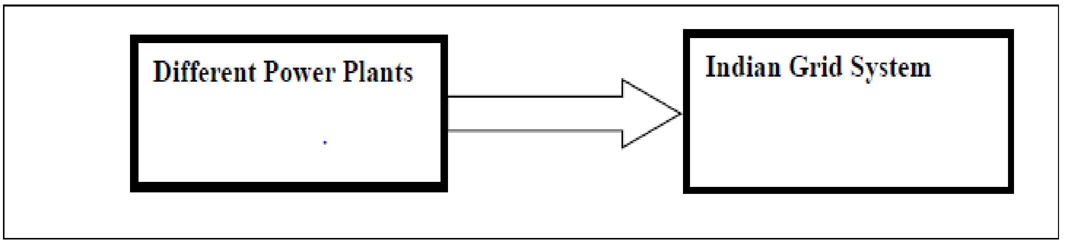
- There is continuous research and development on the geometry of the wind blades, height of towers, diameters of towers, etc., which augurs well for the technological well-being in the development of wind energy to produce clean electricity.
- The generated electricity from the project activity is connected to the grid. The project activity improves the supply of electricity with clean, renewable wind power while contributing to the regional/local economic development.
- Wind energy plants provide local distributed generation, and provide site-specific reliability and transmission and distribution benefits including:
  - improved power quality
  - Reactive power control
  - Mitigation of transmission and distribution congestion

All the above are the contributions of the project activity to sustainable development

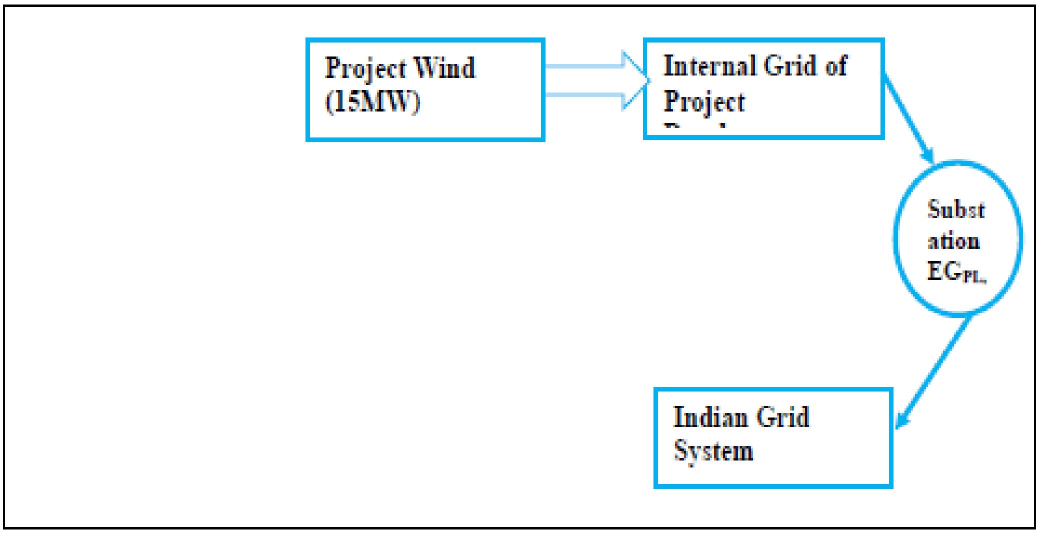
B.3. Baseline Emissions>>

In the absence of the project activity, the equivalent amount of electricity would have been imported from the regional grid (which is connected to the unified Indian Grid system (NEWNE Grid)), which is carbon intensive due to predominantly sourced from fossil fuel-based power plants. Hence, baseline scenario of the project activity is the grid-based electricity system, which is also the pre project scenario.

Schematic diagram showing the baseline scenario:



Schematic diagram showing the project scenario:



B.4. Debundling>>

This "15 MW Wind Energy Project in Maharashtra" project is not a debundled component of a larger project activity.

SECTION C. Application of methodologies and standardized baselines

C.1. References to methodologies and standardized baselines >>

Please provide the information on the Sectoral Scope, Type, Category applied
SECTORAL SCOPE – 01 Energy industries (Renewable/Non-renewable sources)
TYPE I – Renewable Energy Projects
CATEGORY – AMS. I.D. – Grid connected renewable electricity generation (Version 18.0)[2]

C.2. Applicability of methodologies and standardized baselines >>

The project activity involves generation of grid connected electricity from the construction and operation of a new wind power based power project for supply to grid. The project activity has installed capacity of 15 MW which qualifies for a small scale project activity. The project status is corresponding to the methodology AMS.I.D. Version 18.0 and applicability of methodology is discussed below:

Applicability Criterion	Project Case
4. This methodology is applicable to project activities that: (a) Install a Greenfield plant; (b) Involve a capacity addition in (an) existing plant(s); (c) Involve a retrofit of (an) existing plant(s); (d) Involve a rehabilitation of (an) existing plant(s)/unit(s); or (e) Involve a replacement of (an) existing plant(s).	The project activity is a Renewable Energy Project i.e. Wind Power Project which falls under applicability criteria option 1 (a) i.e., "Install a Greenfield power plant". Hence the project activity meets the given applicability criterion.
5. Hydro power plants with reservoirs that satisfy at least	The project is installation of

[2] https://cdm.unfccc.int/methodologies/DB/W3TINZ7KKWCK7L8WTXFQQOFQQH4SBK

one of the following conditions are eligible to apply this methodology: (a) The project activity is implemented in an existing reservoir with no change in the volume of reservoir; AMS-I.D Small-scale Methodology: Grid connected renewable electricity generation Version 18.0 Sectoral scope(s): 01 4 of 20 (b) The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the project emissions section, is greater than 4 W/m2 ; (c) The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the project emissions section, is greater than 4 W/m2 .	new wind based electricity generation plants (not a hydro power plant). Hence this criteria is not applicable.
6. If the new unit has both renewable and non-renewable components (e.g. a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. If the new unit co-fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15 MW.	The project is wind power project and thus the criterion is not applicable to this project activity.
7. Combined heat and power (co-generation) systems are not eligible under this category	The project is wind power project and thus the criterion is not applicable to this project activity.
8. In the case of project activities that involve the capacity addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct1 from the existing units	The project is a greenfield wind power project and does not involve in capacity addition and thus the criterion is not applicable to this project activity.
9. In the case of retrofit, rehabilitation or replacement, to qualify as a small-scale project, the total output of the retrofitted, rehabilitated or replacement power plant/unit shall not exceed the limit of 15 MW.	The project activity is Greenfield and there is no switching of fossil fuel to renewable energy. Hence the criteria is not applicable to the project activity
10. In the case of landfill gas, waste gas, wastewater treatment and agro-industries projects, recovered methane emissions are eligible under a relevant Type III category. If the recovered methane is used for electricity generation for supply to a grid then the baseline for the electricity component shall be in accordance with procedure prescribed under this methodology. If the recovered methane is used for heat generation or cogeneration other applicable Type-I methodologies such as "AMS-I.C.: Thermal energy production with or without electricity" shall be explored.	This project is a wind power project and hence the criteria is not applicable.
11. In case biomass is sourced from dedicated plantations, the applicability criteria in the tool "Project emissions from cultivation of biomass" shall apply.	The project is not a biomass fired power plant. Hence the criteria is not applicable to the project activity.

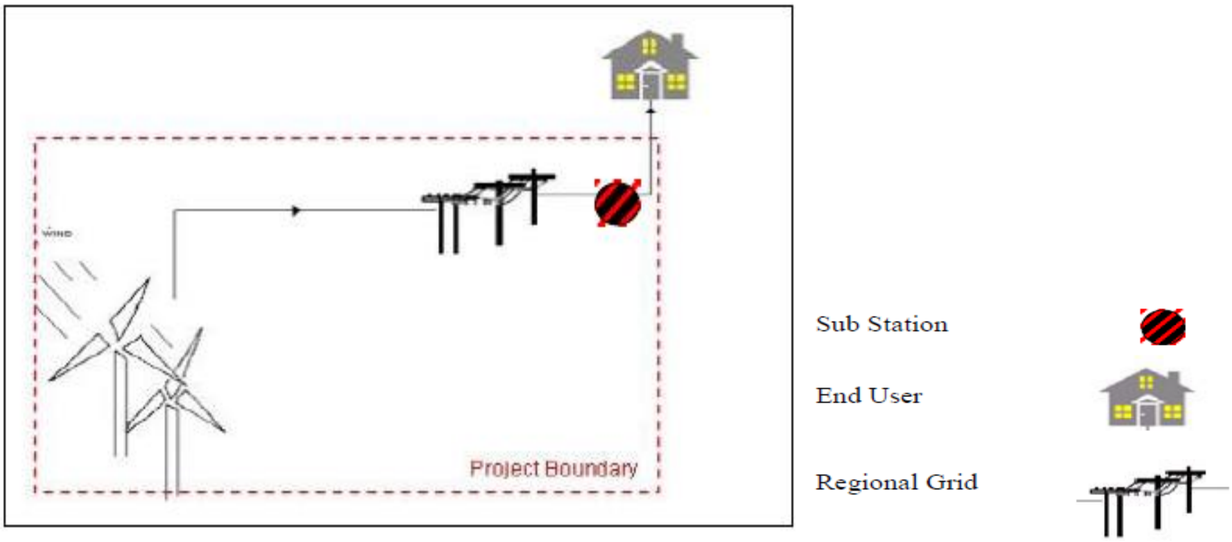
C.3. Applicability of double counting emission reductions >>

The project activity is a Clean Development Mechanism (CDM) project of UNFCCC Registration No. 1778[3]. The crediting period of the registered CDM project is 23/10/2008 – 23/10/2018 (Fixed). PP will request for issuance of carbon offsets in UCR for the post completion of the fixed crediting period (23/10/2008 – 23/10/2018) i.e. crediting period will start from 24/10/2018. The project is not registered with any other voluntary market (National or International). Hence, the criteria for double counting is not applicable for the project.

C.4. Project boundary, sources and greenhouse gases (GHGs)>>

As per applicable methodology AMS.I.D. Version 18.0, "The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the CDM project power plant is connected". Thus, the project boundary includes the Wind Turbine Generators (WTGs) and the Indian grid system.

The project boundary includes the physical, geographical site(s) of:



	Source	GHG	Included?	Justification/Explanation
Baseline	Grid connected electricity generation	CO2	Yes	Major source of emission
		CH4	Excluded	Minor source of emission
		N2O	Excluded	Minor emission source
Project Activity	Greenfield Wind Power Project Activity	CO2	Excluded	No CO2 emission are emitted from the project
		CH4	Excluded	CH4
		N2O	Excluded	No other emissions are emitted from the project

[3] https://cdm.unfccc.int/Projects/DB/BVQI1207584460.66/view

C.5. Establishment and description of baseline scenario (UCR Protocol) >>

As per the approved methodology AMS.I.D. Version 18.0, if the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline scenario is the following:

"The baseline scenario is that the electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid."

The project activity involves setting up of a new wind power plant to harness the green power from wind energy and to supply power to grid. In the absence of the project activity, the equivalent amount of power would have been supplied by the Indian grid, which is fed mainly by fossil fuel fired plants. The power produced at grid from the conventional sources which are predominantly fossil fuel based. Hence, the baseline for the project activity is the equivalent amount of power produced at the Indian grid.

A "grid emission factor" refers to a CO_2 emission factor (tCO_2/MWh) which will be associated with each unit of electricity provided by an electricity system. The UCR recommends an emission factor of 0.9 tCO_2/MWh for the 2014- 2020 years as a fairly conservative estimate for Indian projects not previously verified under any GHG program. Also, for the vintage 2021, the combined margin emission factor calculated from CEA database in India results into higher emission than the default value. Hence, the same emission factor has been considered to calculate the emission reduction under conservative approach.

Net GHG Emission Reductions and Removals:

Thus, $ER_y = BE_y – PE_y – LE_y$

Where:

ER_y = Emission reductions in year y (tCO_2/y)

BE_y = Baseline Emissions in year y (t CO_2/y)

PE_y = Project emissions in year y (tCO_2/y)

LE_y = Leakage emissions in year y (tCO_2/y)

Baseline Emissions

Baseline emissions include only CO_2 emissions from electricity generation in power plants that are displaced due to the project activity. The methodology assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants.

The baseline emissions are to be calculated as follows: $BE_y = EG_{PJ,y} \times EF_{grid,y}$

Where: B

E_y = Baseline emissions in year y (t CO_2)

$EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the project activity in year y (MWh)

$EF_{grid,y}$ = UCR recommended emission factor of 0.9 tCO_2/MWh has been considered. (Reference: General Project Eligibility Criteria and Guidance, UCR Standard, page 4)

Project Emissions

As per AMS.I.D. Version 18.0, only emission associated with the fossil fuel combustion, emission from operation of geo-thermal power plants due to release of non-condensable gases, emission from water reservoir of Hydro should be accounted for the project emission. Since the project activity is a wind power project, project emission for renewable energy plant is nil. Thus, PE_y =0.

Leakage

As per AMS.I.D, Version 18.0, 'If the energy generating equipment is transferred from another activity, leakage is to be considered.' In the project activity, there is no transfer of energy generating equipment and therefore the leakage from the project activity is considered as zero. Hence, LEy= 0

The actual emission reduction achieved during the first crediting period shall be submitted as a part of first monitoring and verification. However, for the purpose of an ex-ante estimation, following calculation has been submitted: Estimated annual baseline emission reductions (BEy) = 56730.189 MWh/year *0.9 tCO_2/MWh = 51,057 tCO_2e/year (i.e. 51,057 CoUs /year). Detailed emission reduction calculation is placed as Appendix I.

C.6. Prior History>>

The project activity is registered with UNFCCC as a Clean Development Mechanism (CDM) project of Registration No. 1778[4]. The crediting period of the registered CDM project is 23/10/2008 – 23/10/2018 (Fixed). Project Proponent will request for issuance of carbon offsets for the period post completion of the fixed crediting period (23/10/2008 – 23/10/2018) i.e. starting from 24/10/2018. Hence, the double counting issue can be avoided.

C.7. Monitoring period number and duration>>

First Issuance Period: 03 years, 02 months – 24/10/2018 to 31/12/2021

C.8. Changes to start date of crediting period >>

There is no change in the start date of crediting period.

C.9. Permanent changes from PCN monitoring plan, applied methodology or applied standardized baseline >>

There are no permanent changes from registered PCN monitoring plan and applied methodology

C.10. Monitoring plan>>

The project activity essentially involves generation of electricity from wind, the employed WEG can only convert wind energy into electrical energy and cannot use any other input fuel for electricity generation. Thus no special ways and means are required to monitor leakage from the project activity.
The recording of the electricity fed to the state utility grid is carried out jointly at the incoming feeder of the state power utility (MSEDCL).
The joint measurement is carried out once in a month in presence of both parties (the developer's representative and officials of the state power utility). Both parties sign the recorded reading.

Data/Parameter	$EG_{PJ,y}$
Data unit	MWh
Description	Quantity of net electricity supplied to the grid during this monitoring period 24/102016 – 31/12/2021

[4] https://cdm.unfccc.int/Projects/DB/BVQI1207584460.66/view

Source of data Value(s) applied	Joint meter reading issued by MSEDCL for project proponent 56730.189 MWh
Measurement methods and procedures	Monitoring of Generation with the help of inbuilt control panel meters: This generation data will be measured continuously with the help of inbuilt control panel meters located at individual WEGs. The Technicians will record the generation data at CMS. Monitoring of Net export of electricity to grid from WTG's connected to Common Meters: The reading from MSEDCL meter will be recorded every month by MSEDCL personnel in the presence of site Engineer. The MSEDCL will apply the apportioning logic and issues the JMR which provided the "Net export of electricity by each WTG" or "Net export of electricity by each project promoter" accordingly the PP raises invoices.
Monitoring frequency	Monitoring continuously and recording monthly. The accuracy of the main meter and check meter can be verified by comparing with each other. The calibration of the common meters (main & check meter) will be done by state utility normally once in five years. Meters Calibration details is attached as Appendix II.
Purpose of data	For baseline emission calculation

Appendix I

	K 400	K 401	K 402	K 407	K 412	K 413	K 254	K 118	J 114	J 115	J 127	J 128	**Total**
Generation in 2018 (MWh)	59.85	56.60	59.52	60.34	55.74	56.92	87.97	71.93	67.24	70.54	94.41	84.52	**825.58**
Generation in 2019 (MWh)	2,124.63	1,970.66	1,868.80	2,308.58	1,915.52	2,005.38	1,938.97	1,747.29	1,777.11	1,199.41	1,972.69	1,837.58	**22,666.62**
Generation in 2020 (MWh)	1,391.74	1,231.27	1,297.09	1,501.59	1,264.36	1,332.71	1,358.50	1,191.57	1,219.40	1,279.84	1,332.45	1,388.25	**15,788.76**
Generation in 2021 (MWh)	1,725.13	812.52	841.42	933.91	1,584.11	1,703.07	1,629.40	1,497.22	1,646.06	1,575.74	1,737.76	1,762.89	**17,449.23**
Total Generation (MWh)	5,301.35	4,071.06	4,066.82	4,804.42	4,819.73	5,098.07	5,014.84	4,508.01	4,709.80	4,125.54	5,137.31	5,073.24	**56,730.19**
EF (tCO2/MWh)	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	
Emission Reduction in 2018 (tCO2)	54	51	54	54	50	51	79	65	61	63	85	76	**743.00**
Emission Reduction in 2019 (tCO2)	1,912	1,774	1,682	2,078	1,724	1,805	1,745	1,573	1,599	1,079	1,775	1,654	**20,400.00**
Emission Reduction in 2020 (tCO2)	1,253	1,108	1,167	1,351	1,138	1,199	1,223	1,072	1,097	1,152	1,199	1,249	**14,210.00**
Emission Reduction in 2021 (tCO2)	1,553	731	757	841	1,426	1,533	1,466	1,347	1,481	1,418	1,564	1,587	**15,704.00**
Total Emission Reduction (tCO2)	4,771	3,664	3,660	4,324	4,338	4,588	4,513	4,057	4,239	3,713	4,624	4,566	**51,057.00**

Appendix II

FY2016-18						
Sub station Name	**Feeder Name**	**WTG connected**	**Main Meter**	**Check Meter**	**Date of Calibration**	**Due date of Calibration**
Valve GSS 220KV/33KV	Valve-1	K254	4725793	4725788	29/03/2018	28/03/2023
Jamde GSS 220KV/33KV	Jamde-3	J114, J115, J127 & J128	4862465	4725796	07/03/2018	06/03/2023
Jamde GSS 220KV/33KV	Jamde-4	K118	2793536	2793537	23/03/2018	22/03/2023
Gangapur GSS 220KV/33KV	Gangapur-8	K412, K413	2831472	2831473	20/03/2018	19/03/2023
Gangapur GSS 220KV/33KV	Gangapur-9	K400, K401, K402 & K407	2831474	2831475	20/03/2018	19/03/2023