Monitoring Report

CARBON OFFSET UNIT (CoU) PROJECT

Title: 4.8 MW Project by Wind World Wind Farms (MP) Pvt. Ltd

Version 2.0

Date 27/05/2025

First CoU Issuance Period: 11 years 11 months 30 days

Monitoring Period: 01/01/2013 to 31/12/2024

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

Monitoring Report	
Title of the project activity	4.8 MW Project by Wind World Wind Farm (MP) Pvt. Ltd
UCR Project Registration Number	515
Version	2.0
Completion date of the MR	27/05/2025
Monitoring period number and duration of this monitoring period	Monitoring Period Number: First Issuance Duration of this monitoring Period: 01/01/2013 to 31/12/2024
Project participants	Wind World Wind Farms (MP) Pvt Ltd.
Host Party	India
Applied methodologies and standardized baselines	AMS.I-D Grid-connected electricity generation from renewable sources --- Version 18.0
Sectoral scopes	01 Energy industries (Renewable/Non-Renewable Sources)
Estimated amount of GHG emission reductions for this monitoring period in the registered PCN	2013: **9227** CoUs (**9227** tCO2eq)
	2014: **8658** CoUs **(8658**tCO2eq)
	2015: **7972**CoUs (**7972** tCO2eq)
	2016:**9086** CoUs (**9086** tCO2eq)
	2017:**7705** CoUs (**7705**tCO2eq)
	2018:**8698** CoUs (**8698**tCO2eq)
	2019:**8562** CoUs (**8562**tCO2eq)
	2020:**7663**CoUs (**7663**tCO2eq)
	2021:**8095** CoUs (**8095**tCO2eq)
	2022:**7957** CoUs (**7957** tCO2eq)
	2023: **7395 CoUs (7395** tCO2eq)
	2024: **5766** CoUs (**5766** tCO2eq)
Total:	**96,784CoUs (96,784 tCO2eq)**

SECTION A. Description of project activity

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

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

The "4.8 MW Project by Wind World Wind Farm (MP) Pvt. Ltd" is in Nagda hill, near village Rajoda, in Dewas district State of Madhya Pradesh. The project activity involves supply, erection, commissioning and operation of 6 machines of rated capacity 800 kW each. The machines are Enercon E-48 make.

It has been operational since 20 August 2006, which is the earliest commissioning date, and the last commissioning date of the project is 19 September 2006, previously under M/s Enercon Wind Farm (Madhya Pradesh) Pvt. Ltd., now operating as wind world wind farms (MP) Pvt Ltd. (hereinafter referred to as the Project Proponent or PP).

Sl No	Make	Capacity	Commissioning date
1	Enercon	800 kW	19/09/2006
2	Enercon	800 kW	20/08/2006
3	Enercon	800kW	20/08/2006
4	Enercon	800 kW	20/08/2006
5	Enercon	800kW	20/08/2006
6	Enercon	800kW	20/08/2006

WIND WORLD WIND FARMS(MP) PVT LTD has installed 4.8 MW wind farm in the state of Madhya Pradesh in India. Wind World (India) Limited ("Wind World") is the equipment supplier and the operations and maintenance contractor for the Project. There are 6 Wind Energy Convertors ("WEC's") of with rated capacity 800 KW each. The generated electricity is supplied to M.P Paschim Kshetra Vidyut Vitaran Co. Ltd, Indore under a long-term power purchase agreement (PPA). The expected operational lifetime of the project is for 20 years. The project being a renewable energy generation activity, leads to reduction in fossil fuel dominated electricity generation from the Indian grid.

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 project is expected to generate and

supply **108,747.77 MWh** of electricity to the Indian grid. The project thus addresses the demand–supply gap in the state of Madhya Pradesh will assist the sustainable growth, conservation of resources and reduction of greenhouse gas emissions by using renewable energy source like wind energy. The project activity will contribute towards reduction of greenhouse gas (GHG) emission from the atmosphere, which has been estimated to be approximately **96,784tCO2e**, by displacing an equivalent amount of electricity generation through the operation of existing fuel mix in the grid comprising mainly of fossil fuel-based power plants. Thus, the project does not only reduce the demand-supply gap of the respective grid, but also helps 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 Indian 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.

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

The project activity consists of 6 Wind turbines of 800kW manufactured and supplied by Enercon. This project Generate 4.8 MW power which is consumed by customers delivered by the Grid.

In wind energy generation, kinetic energy of wind is converted into mechanical energy and subsequently into electrical energy. Wind has a considerable amount of kinetic energy when blowing at high speeds. This kinetic energy when passing 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 clean technology since there are no GHG emissions associated with electricity generation.

Main component of the windmill is explained below:

Main Tower

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

Blades

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

Nacelle

The Nacelle is the one which contains all the major parts of a windmill. 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 connects 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

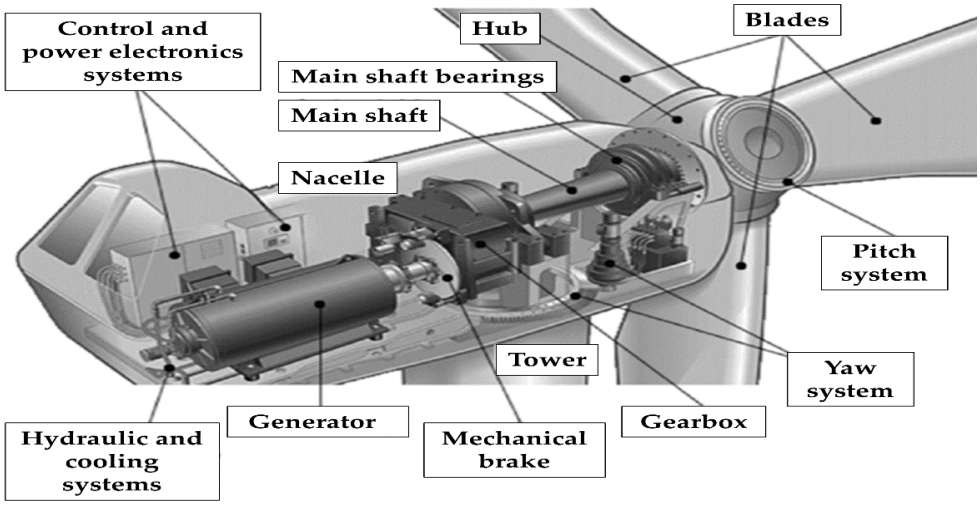
The gearbox is used to increase the speed ratio so that the rotor speed is increased to the rated generator speed. Oil cooling is employed to control the heating of the gearbox. Gearboxes are mounted over dampers to minimize vibration. The main bearings are placed inside the housing.

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



c) Relevant dates for the project activity (e.g. construction, commissioning, continued operation periods, etc.)>>

Provide the duration of the crediting period corresponding to the monitoring period covered in this monitoring report.

UCR Project ID: **515**
Start Date of Crediting Period: 01/01/2013
Project Commissioned: 20/08/2006 (earliest)

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	01/01/2013
Carbon credits claimed up to	31/12/2024
Total ERs generated (tCO_{2eq})	96,784_tCO2eq
Leakage	0

e) Baseline Scenario>>

As per the approved AMS-I.D.: "Grid connected renewable electricity generation", version 18 if the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline scenario is the following:

"***If the project activity is the installation of a Greenfield power plant, the baseline scenario 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 to the grid".***

A.2. Location of project activity>>

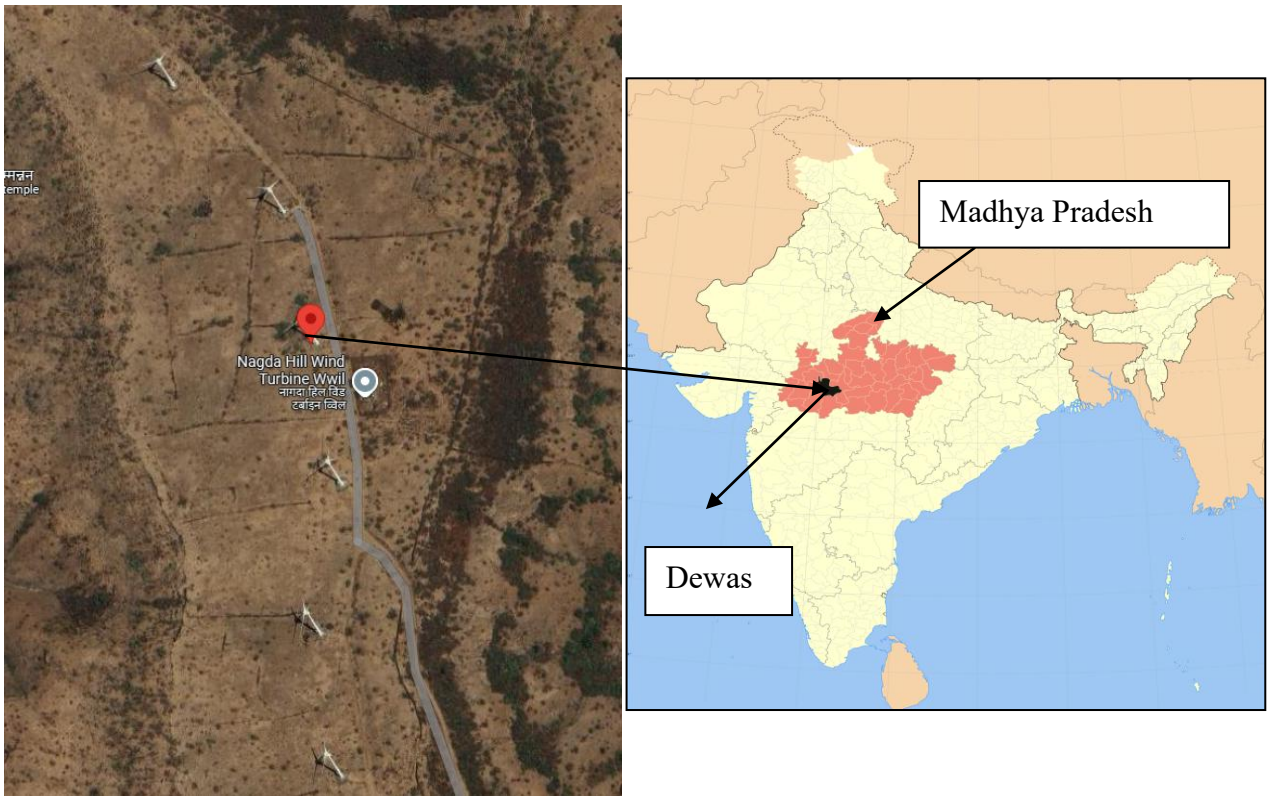
The project activity is located at location No. 12 at Nagda Hills, near Village Rajoda, Distt. Dewas, of Madhya Pradesh.

Details of Latitude & Longitude of Individual machines have been Given below: -

SL no	LOC no	Make	Capacity	Village	Latitude	Longitude
1	12	E-48	800kW	Rajoda	22.91006565	76.08303331
2	12	E-48	800kW	Rajoda	22.91138227	76.08271664

3	12	E-48	800kW	Rajoda	22.91264895	76.08249997
4	12	E-48	800kW	Rajoda	22.91399894	76.08269996
5	12	E-48	800kW	Rajoda	22.91528229	76.08241665
6	12	E-48	800kW	Rajoda	22.90808232	76.08275

The location of the project site has been shown below:



Project Activity

A.3. Parties and project participants >>

Party (Host)	Participants
India	Wind World Wind Farms (MP) Pvt Ltd.

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

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

TYPE I- **Renewable Energy Projects**

AMS.I-D Grid-connected electricity generation from renewable sources ---Version 18.0

A.5. Crediting period of project activity >>

Type- Renewable
State date- 01/01/2013
Length of the crediting period corresponding to this monitoring period: 11 years 11 months 30 days- 01/01/2013-31/12/2024

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

Contact Person- Lokesh Jain
Email- lokesh.jain@viviidgreen.com
Phone no- 91 89208 56146
Address- Sri Krishna Complex, New Link Road, Opp. Laxmi Industrial Estate, Andheri (West), Mumbai - 400053

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>>

The main Purpose of the project activity is the implementation and operation of 4.8 MW wind Project to generate electricity in high wind speed areas of Madhya Pradesh. Wind World Wind Farms (MP) Pvt Ltd is the Project Proponent of these wind farm. The project was commissioned in the Month of Aug'2006 & Sept'2006 in Madhya Pradesh. The applied technology is one of the most environment friendly technologies available as the operation of the wind power plant does not emit any GHGs or any other harmful gases unlike the operation of conventional power plant. The project activity has used the reliable and proven technology to ensure that an environmentally safe and sound technology has been implemented.

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

The project activity involves 6 numbers of wind energy converters (WECs) of Enercon make (800 KW, [1]E48) 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 other salient features of the state-of-art-technology are:

Feature	Specification
Turbine	
Configuration	Three blade, horizontal axis, upwind
Rated Power	800kW at 12m/s
Rotor Speed	16 to 32 rpm
IEC 61400-1 Turbine Class	IIA
Site Average Wind Speed	8.5 m/s
Survival Wind Speed	59.5 m/s
Rotor	
Rotor Diameter	48 m
Swept Area	1,810 m²

[1] https://renewablesfirst.co.uk/renewable-energy-technologies/windpower/wind-turbines/enercon-e48-800-kw-wind-turbine/

Blade Material	GRP (Epoxy)
Category	Feature/Specification
Power regulation	Pitch controlled variable speed
Generator	
Generator Type	ENERCON direct drive synchronous ring generator
Configuration	3-Phase, 400V, 50Hz - 60Hz
Brake & Safety System	
Main Brake System	3 independent pitch control systems with emergency power supply
Secondary System	Rotor brake and Rotor lock (maintenance purposes)
Automatic Shutdown triggered by	High wind speed, grid failure, over-speed, all other fault conditions
Controls	
Control Systems 1 User Interface	ENERCON SCADA
Towers	
Available Hub Heights	50 m, 60 m, 75 m

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.

Social benefits:

- The project activity will lead to the development of supporting infrastructure such as road network etc., in the wind park location, the access to which is also provided to the local population.
- The project activity will lead to alleviation of poverty by establishing direct and indirect benefits through employment generation and improved economic activities by strengthening of local grid of the state electricity utility.
- Use of a renewable source of energy reduces the dependence on imported fossil fuels and associated price variation thereby leading to increased energy security.

Environmental benefits:

- The project activity employs renewable energy source for electricity generation instead of fossil fuel- based electricity generation which would have emitted gaseous, liquid and/or solid effluents/wastes.
- 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 and contributes to environmental well-being.

Economic benefits:

- The project activity requires temporary and permanent, skilled and semi-skilled manpower at the wind park; this will create additional employment opportunities in the region.
- The generated electricity will be fed into the NEWNE regional grid through local grid, thereby improving the grid frequency and availability of electricity to the local consumers (villagers & sub- urban habitants) which will provide new opportunities for industries and economic activities to be setup in the area thereby resulting in greater local employment, ultimately leading to overall development.

Technical benefits:

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

United Nations Sustainable Development Goals:

The project activity generates electrical power using wind energy, which is generated from windmills, thereby displacing non-renewable fossil resources resulting to sustainable, economic and environmental development. In the absence of the project activity equivalent amount of power generation would have taken place through fossil fuel dominated power generating stations. Thus, the renewable energy generation from project activity will result in reduction of the greenhouse gas emissions.

SDG Goals	Description
Goal 7 	This wind energy project will generate clean electricity at a more accessible price for consumers. By utilizing a renewable resource, the project contributes to a growing share of clean energy sources in the global energy mix, ultimately reducing reliance on fossil fuels.
Goal 8 	This project activity generates additional employment in the operations and maintenance of the wind farm for the local people. This project will achieve full and productive employment and decent work.
Goal 13 	This 4.8 MW wind power project meets the SDG 13 goal by displacing fossil fuel with clean energy. This project is expected to reduce 96,784tCO_2 emission.

B.3. Baseline Emissions>>

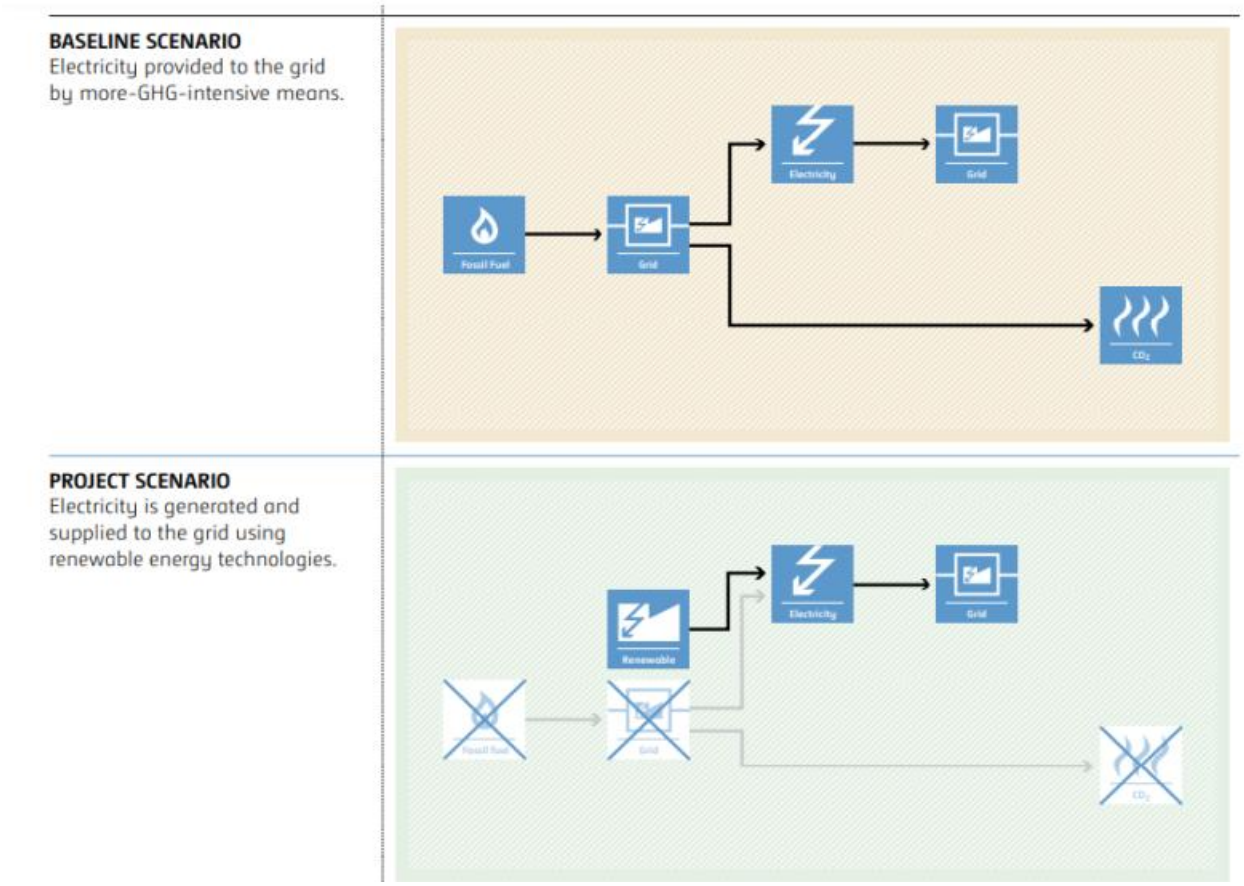
The baseline scenario identified at the PCN stage of the project activity is:

The scenario existing prior to the implementation of the project activity, is electricity delivered to the facility by the project activity that would have otherwise been generated by the operation of grid connected power plants and by the addition of new generation sources. This is a green field project activity. There was no activity at the site of the project participant prior to the implementation of this project activity. Hence pre-project scenario and baseline scenario are the same.

As per the approved AMS-I.D.: "Grid connected renewable electricity generation", version 18 if the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline

scenario is the following: “If the project activity is the installation of a Greenfield power plant, the baseline scenario 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 to the grid”.

The Schematic diagram showing the baseline scenario:



B.4. Debundling>>

This project is not a debundled component of a larger registered carbon offset project activity.

SECTION C. Application of methodologies and standardized baselines

C.1. 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

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 selling it to grid. The project activity has an installed capacity of 4.8 MW which will qualify for a Small-scale project activity. The project status corresponds to the methodology AMS-I.D, and applicability of methodology is discussed below.

Applicability Criterion	Project Case
1) This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass: (a) Supplying electricity to a national or a regional grid; or (b) Supplying electricity to an identified consumer facility via national/regional grid through a contractual arrangement such as wheeling.	The project activity is a Renewable Energy Project i.e., Wind project which falls under applicability criteria option 1 (a) i.e., "Supplying electricity to a national or a regional grid"
2)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 option (a) of applicability criteria 2 is applicable as project is a Greenfield plant /unit. Hence the project activity meets the given applicability criterion

3) Hydro power plants with reservoirs that satisfy at least 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 the reservoir. (b) The project activity is implemented in an existing reservoir, where the volume of the 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	The project activity involves the installation of a Wind Power Plant Hence; this criterion is not applicable.
4) 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 proposed project is a 4.8MW Wind power project, i.e., the only component is renewable power project below 15 MW, thus the criterion does not apply to this project activity.
5) Combined heat and power (co-generation) systems are not eligible under this category.	This is not relevant to the project activity as the project involves only wind power generating units.
6) 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	There is no other existing renewable energy power generation facility at the project site. Therefore, this criterion is not applicable.
7) 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 a new installation; it does not involve any retrofit measures nor any replacement and hence is not applicable for the project activity.
8) 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"	This is not relevant to the project activity as the project involves only wind power generating units.

shall be explored.	
9. In case biomass is sourced from dedicated plantations,the applicability criteria in the tool "Project emissions from cultivation of biomass" shall apply.	Not biomass is involved, the project is only a wind power project and thus the criterion is not applicable to this project activity.

C.3 Applicability of double counting emission reductions >>

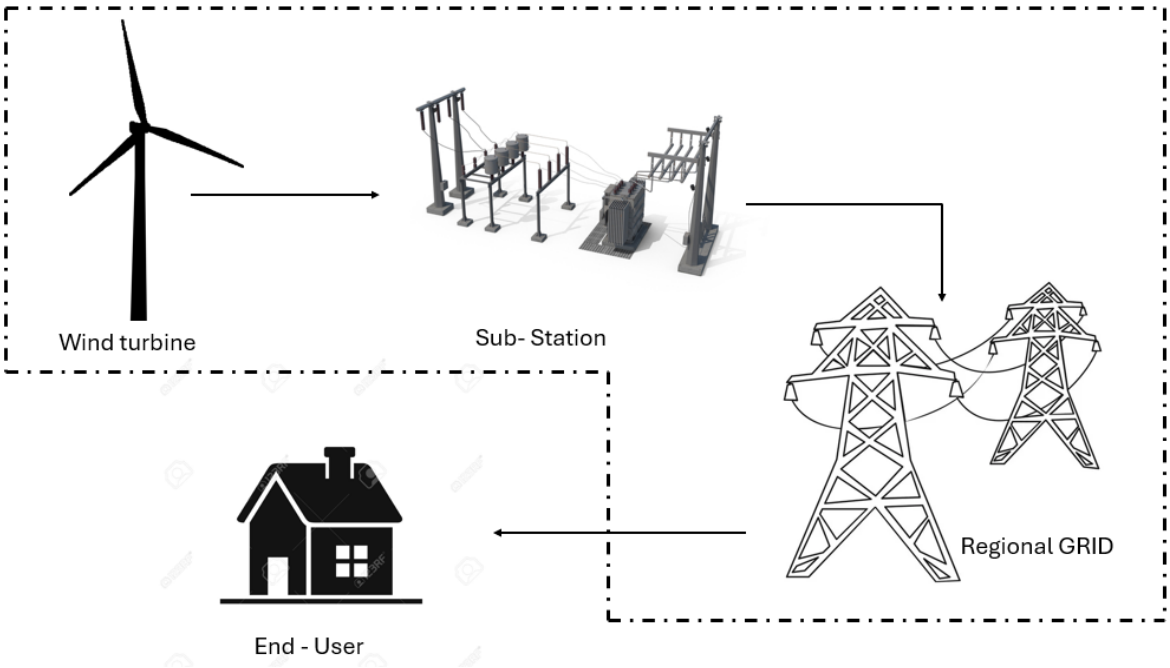
There is no double accounting of emission reductions in the project activity due to the following reasons:

- Project is uniquely identifiable based on its location coordinates,
- Project has dedicated commissioning certificate and connection point,
- Project is associated with energy meters which are dedicated to the consumption point for project developer.

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

According to the applicable methodology, the spatial extent of this project activity includes the project site and all the power plants connected physically to the electricity system (grid) that the power project is connected to. Therefore, the project boundary includes all the 6 WECs along with the WECs of the other customers connected to the sub-station and the metering points. The project activity is further connected to the network of state transmission utility which Falls under the network of Indian grid. Thus, the project boundary also includes all the power plants physically connected to the Indian grid.

Project boundary:



The baseline study of the Indian grid shows that the main sources of GHG emissions under the baseline scenario are CO_2 emissions from the conventional power generating systems. Other emissions are that of CH_4 and N_2O but both emissions have been excluded for simplification. The project activity generates.

	Source	GHG	Included?	Justification/Explanation
Baseline	Emissions from burning non-renewable wood Emissions from animal manure stored on site	CO2	Included	Major source of emission
		CH4	Included	Major source of emission
		N2O	Excluded	Excluded for simplification. This is conservative
Project Activity	Emissions from on-site electricity use Emissions from residue from anaerobic digester composting	CO2	Excluded	Electricity is generated from collected biogas; hence these emissions are not accounted for. CO2 emissions from the decomposition of organic waste are not accounted
		CH4	Excluded	Excluded for simplification. This is conservative
		N2O	Excluded	Excluded for simplification. This is conservative

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

As per the approved AMS-I.D.: "Grid connected renewable electricity generation", version 18, 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 grid connected wind power plant to harness the green power from wind energy. 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 other 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.

As per approved consolidated AMS-I.D.: "Grid connected renewable electricity generation", version 18, emission reduction is estimated as difference between the baseline emission and project emission after factoring into leakage.

Emission reductions are calculated as per methodology:

Thus, $ER_y = BE_y - PE_y - LE_y$

(Eq. 1)

Where,

ER_y = Emissions reductions in year y (t CO2)

BE_y = Baseline emissions in year y (t CO2)

PE_y = Project emissions in year y (t CO2)

LE_y : Leakage Emission in the year y (tCO_2/year)

Baseline Emissions

As per the CDM approved AMS-I.D.: "Grid connected renewable electricity generation", version 18, Baseline emissions include only CO2 emissions from electricity generation in fossil fuel fired 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 as existing grid-connected power plants and the addition of new grid-connected power plants.

The Baseline emissions as per methodology AMS-I.D :

$BE_y = EG_{PJ, y} \times EF_{grid, CM, y}$

Where:

BE_y= Baseline emissions in year *y* (tCO_2/yr)

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

$EF_{grid,y}$= Grid Emission factor in year y (tCO_2/MWh)

Since the project activity is the installation of a new grid connected renewable power plant (green field project), hence, $EG_{PJ,y}$ has been calculated as :

EGPJ,y = EGfacility,y

Where:

$EG_{PJ,y}$	= Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year *y* (MWh/yr)
EGfacility,y	= Quantity of net electricity generation supplied by the project plant/unit to the grid in year *y* (MWh/yr)

A "grid emission factor" denotes the CO2 emission factor (measured in tCO2/MWh) associated with each unit of electricity supplied by an electricity system. The UCR suggests employing an emission factor of 0.9[2] from 2013 to 2023 and Emission Factor of 0.757 tCO2/MWh for 2024 as a cautious estimate for Indian projects not previously verified under any GHG program. Similarly, for the vintage 2021-22, the combined margin emission factor obtained from the CEA database in India corresponds with the default value. Consequently, the same emission factor is utilized for computing emission reductions.

Project Emission:
As per paragraph 39 of AMS-I.D. version-18, 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.

$PE_y = 0$.

Leakage Emission:
The Leakage emissions potentially arising due to activities such as power plant construction and upstream emissions from fossil fuel use (e.g. extraction, processing, transport etc.) are neglected According to the applied methodology AMS-I. D Paragraph 42, Version 18 guidance on leakage, there is no leakage emission from this project activity has been considered.
Thus, $LE_y = 0$.

Hence no other leakage emissions are considered.

[2]As per UCR CoU Standard Update: 2024 Vintage UCR Indian Grid Emission Factor Announced | by Universal Carbon Registry | Jan, 2025 | Medium

Actual Total baseline emission reductions (BEy)= 96,784CoUs (96,784 tCO2eq)

Year	Net Quantity of net electricity generation supplied by the project activity to the grid in year y	Emission Factor	Baseline Emission	Project emissions or actual net GHG removals by sink	Emission reductions or net anthropogenic GHG removals by sinks
	[MWh]	(tCO2e/MWh)	(tCO2e)	(tCO2e)	(tCO2e)
		[EFy]	[Bey]= [EGfacility, y]* [EFy]	[PEy]	[ERy]=[Bey]-[Pey]-[Ley]
2013	10,252.12	0.9	9226.91	0	9227
2014	9,619.91	0.9	8657.92	0	8658
2015	8,857.37	0.9	7971.63	0	7972
2016	10,095.73	0.9	9086.16	0	9086
2017	8,561.33	0.9	7705.19	0	7705
2018	9,664.41	0.9	8697.97	0	8698
2019	9,513.27	0.9	8561.94	0	8562
2020	8,514.50	0.9	7663.05	0	7663
2021	8,994.32	0.9	8094.89	0	8095
2022	8,840.56	0.9	7956.50	0	7957
2023	8,216.80	0.9	7395.12	0	7395
2024	7,617.46	0.757	5766.42	0	5766
Total	**1,08,747.77**		**96783.70**		**96784**

C.6. Prior History>>

The project activity is a small-scale wind power project, and this project was never applied under any other GHG mechanism prior to this registration with UCR. Also, the capacity or the total project has not been applied for any other environmental crediting or certification mechanism. Hence the project will not cause double accounting of carbon credits (i.e., COUs).

C.7. Monitoring period number and duration>>

First Issuance Period : 11 years 11 months 30 days

Crediting Period : 01/01/2013 to 31/12/2024

Monitoring Period : 01/01/2013 to 31/12/2024

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

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

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

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

C.10. Monitoring plan>>

Data and Parameters available at validation (ex-ante values):

Data/Parameter	*EF*Grid,y
Data unit	tCO2 /MWh
Description	"A grid emission factor" denotes the CO2 emission factor (measured in tCO2/MWh) associated with each unit of electricity supplied by the grid. A grid emission factor of 0.9 tCO2/MWh is recommended for the years 2013-2023 as a conservative estimate for Indian projects not previously verified under any GHG program. Similarly, for the year 2024, a grid emission factor of 0.757 tCO2/MWh is to be applied. These conservative factors are used to calculate emission reductions."
Source of data Value(s) applied	UCRCoUStandardAug2022updatedVer6_090822220127104470.pdf (rackcdn.com) UCR CoU Standard Update: 2024 Vintage UCR Indian Grid Emission Factor Announced | by Universal Carbon Registry | Jan, 2025 | Medium
Measurement methods and procedures	-
Monitoring frequency	- Ex-ante fixed parameter
Purpose of data	For the calculation of Emission Factor of the grid

Data and Parameters to be monitored

Data / Parameter	EGpj,y net
Data unit	MWh
Description	Net electricity supplied to the Indian grid facility by the project activity.
Source of data	Joint Meter Reading Report

Measurement procedures (if any):	Data Type: Measured Monitoring equipment: Energy Meters are used for monitoring Archiving Policy: Electronic Calibration frequency: Once in 5 years (considered as per provision of CEA India). Calibration frequency: once in five years (as per CEA Indian provision) Cross checking: Quantity of net electricity supplied to or consumed at PP's facility will be cross checked from the monthly bills or invoices raised by Discom whichever is applicable. The Net electricity supplied to the grid will be calculated by the values of electricity export to the grid. The Net electricity is recorded as following: Thus, EGpj,y= EGnet, Export.
Measurement Frequency:	Monthly The net energy exported to the grid is measured every month using calibrated energy meter by the State Electricity Board authorities in the presence of the project implementer or its representatives. The meter/s shall be jointly inspected and sealed by authorised representatives of the company and the state utility. Measuring procedure: Will be measured by an export-import energy meter. The net electricity exported by the project plant would either be directly sourced as a measured parameter or be calculated by deducting the amount of imported electricity from the total amount of exported electricity. Accuracy class of energy meter: 0.2s Calibration Frequency: As per the Central Electricity Authority the testing and calibration frequency should be once in five years.
QA/QC procedures applied:	Continuous monitoring, hourly measurement monthly recording. Tri-vector (TVM)/ABT energy meters with accuracy class 0.2s.
Value applied:	**108,747.77 MWh**
Purpose of data:	Calculation of baseline emission.

Appendix-1>Meter Change Details

Main Meter- **Q0305644** Check Meter- **Q0305645**

Q0305644 ⟶

Q0305645 ⟶

Appendix- 2 > Calibration Details

Company Name	Plant Capacity (MW)	Location	Commissioning Date	Calibration date	Calibration validity	Calibration delay
4.8 MW Project by Wind World Wind Farms (MP) Pvt. Ltd	**4.8 MW**	Madhya Pradesh	19-09-2006 20/09/2006	17.08.2023	16.08.2028	01.01.2013 to 17.07.2023

There is calibration delay for the period mentioned above. Following a conservative approach, an error factor was applied till the Month of **Aug'23**. The error factor has been applied in net export values for delay period **(01.01.2013 to 31.08.2023)** as meters were not calibrated as per the calibration frequency. As per VVS requirement: error factor of "±0.2%" should be applicable for both export & import i.e. the measured values. However, net electricity generation is considered as per the registered monitoring plan, the separate export and import values are not available. Hence being conservative and to account for the error for both export & import, a cumulative error of "-0.4%" on net electricity generation has been applied for delay period.

https://cea.nic.in/wp-content/uploads/2020/02/meter_reg.pdf