PROJECT CONCEPT NOTE

CARBON OFFSET UNIT (CoU) PROJECT

Title: Clean Energy Project in the State of Tamil Nadu

Version 1.2

Date 24/06/2025

First CoU Issuance Period: 02 years,00 Months

Date:01/01/2023 to 31/12/2024

Project Concept Note (PCN)
CARBON OFFSET UNIT (CoU) PROJECT

BASIC INFORMATION	
Title of the project activity	Clean Energy Project in the State of Tamil Nadu
The scale of the project activity	Large-Scale Wind Project
Completion date of the PCN	24/06/2025
Project participants	Vaayu Renewable Energy (Tapti) Private Limited
Host Party	INDIA
Applied methodologies and standardized baselines	ACM0002-Consolidated baseline methodology for grid-connected electricity generation from renewable sources -Version 22.0
Sectoral scopes	01 Energy industries (Renewable/Non-renewable Sources)
Estimated amount of total GHG emission reductions	**18,251** CoUs (Annually)

SECTION A. Description of project activity

A.1. Purpose and general description of Carbon offset Unit (CoU) project activity >>

The project titled "Clean Energy Project in the State of Tamil Nadu" is spread across Tirunelveli district in the state of Tamil Nadu. This project is an operational activity with continuous reduction of GHG, currently being applied under "Universal Carbon Registry" (UCR).

Purpose of the project activity:

The purpose of the project activity is to utilize renewable wind energy for generation of electricity. The project activity replaces anthropogenic emissions of greenhouse gases (GHG's) into the atmosphere, which is estimated to be approximately 18,251 tCO_2e per year, by displacing the equivalent amount of electricity generation estimated i.e. 23,232 MWh/yr through the operation of existing fuel mix in the grid comprising mainly fossil fuel-based power plants and future capacity expansions connected to the grid.

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The project activity is set up to produce clean power from the wind energy converters (WEC's). The project activity involves supply, erection, commissioning and operation of 18 machines of rated capacity 800 kW each. The machines are Enercon E-53 make. The WEGs generates 3-phase power at 400V, which is stepped up to 33 kV. The Project can operate in the frequency range of 47.5–51.5 Hz and in the voltage range of 400 V ± 12.5%. The electricity generated by project activity will be pooled to Tamil Nadu Generation & Distribution Corporation Ltd.

The project activity consists of 18 WEGs (800 kW) of Enercon make E-53. The first machine under the project activity was commissioned on 29 September 2011 and last machine under the project activity was commissioned on 31 January 2012. The commissioning dates for all the machines include in the project activity are given in the table below.

Sr No.	HTSC No.	No of WEGs Connected	Date of Commissioning
1	3914	01	29/09/2011
2	3915	01	29/09/2011
3	3916	01	29/09/2011
4	3917	01	29/09/2011
5	3918	01	29/09/2011
6	3919	01	29/09/2011
7	3920	01	29/09/2011
8	3921	01	29/09/2011
9	3947	01	30/09/2011
10	3948	01	30/09/2011
11	3949	01	30/09/2011
12	3954	01	07/10/2011
13	3955	01	07/10/2011
14	3957	01	20/10/2011
15	3959	01	21/10/2011

16	3981	01	28/12/2011
17	3986	01	10/01/2012
18	3999	01	31/01/2012

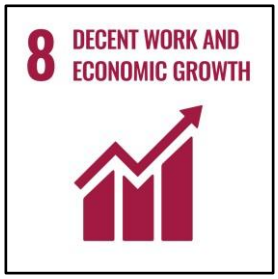
A.2 Do no harm or Impact test of the project activity>>

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

- **Social benefits:**
  - The project activity will 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.
  - 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.

- **Environmental benefits:**
  - Utilizing wind energy instead of burning fossil fuels for electricity generation significantly decreases the emission of harmful pollutants, fostering cleaner air, water, and soil.
  - Leveraging wind energy aids in preserving natural resources and minimizing detrimental impacts on the environment, contributing to overall ecological well-being.
  - Moreover, harnessing wind energy offers a sustainable alternative to burning fossil fuels, which not only mitigates pollution but also conserves natural habitats and biodiversity, supporting healthier ecosystems and enhancing environmental resilience.

- **Economic benefits:**
  - 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.

Goal 7 	➢ The project activity will generate clean energy, which with increased shared will increase the affordability at a cheaper rate to end user. The project activity will utilize wind energy (renewal resource) to generate power. The project activity will increase the share of renewable resource-based electricity to global mix of energy consumption
Goal 8 	➢ Decent work and economic growth. This project activity generates additional employment for skilled and unskilled, also the project situated in remote area will provide employment opportunities to unskilled people from villages. The training on various aspect including safety, operational issues and developing skill set will also be provided to employees ➢ This project will achieve full and productive employment and decent work.
Goal 13 	➢ This 14.4 MW wind power project meet the SDG 13 goal by saving fossil fuel and produce clean energy. This project is expected to reduce 18,251 **tCO_2** annually ➢ In a Greenfield project, electricity delivered to the grid by the project would have otherwise been generated by the operation of grid connected power plants. Thereby the project activity reduces the dependence on fossil fuel-based generation units and as there are no associated emissions with this project it contributes to the reduction of greenhouse gases (GHG) emissions.

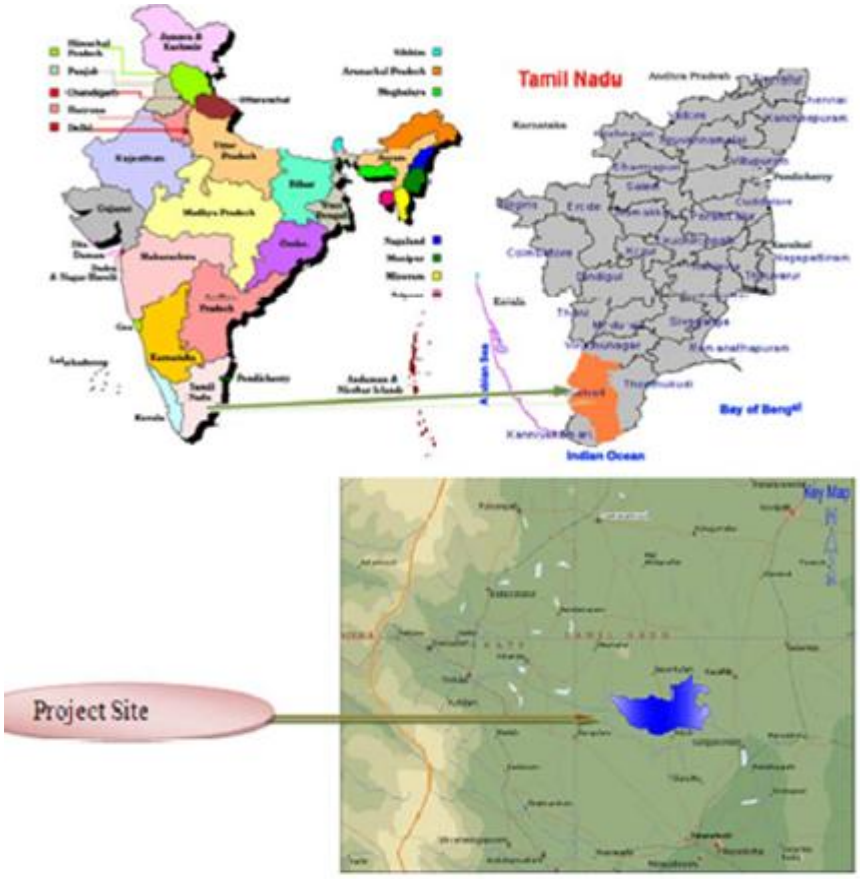
A.3. Location of project activity >>

Country :India
State :Tamil nadu.
District: Tirunelveli
Village: Kanarpatti, Ettankulam, Kalakudi, Kuruchikulam, Ukkirankottai, Vagaikulam, Kattarankulam and Melelanthaikulam

The project consists of 18 numbers of E-53 WECs of 800 kW each. The latitude and longitude of the project activity are given below:

Vagaikulam Site, Tirunelveli District, Tamil Nadu											
Sl. No	**Loc. No.**					**Latitude (N)**			**Longitude (E)**		
		HTSC No	**Village**	**Taluka**	**District**	**Deg.**	**Minutes**	**Seconds**	**Deg**	**Minutes**	**Seconds**
1	V200	3957	Kanarpatti	Tirunelveli	Tirunelveli	8	52	57.09	77	38	51.01
2	118	3919	Kattarankulam	Tirunelveli	Tirunelveli	8	55	21	77	40	24.28
3	V177	3947	Ettankulam	Tirunelveli	Tirunelveli	8	52	59.92	77	38	12.89
4	V98	3914	Kalakudi	Tirunelveli	Tirunelveli	8	53	17.24	77	36	21.54
5	V50	3915	Kuruchi kulam	Tirunelveli	Tirunelveli	8	52	49.24	77	35	10.4
6	V52	3916	Kuruchi kulam	Tirunelveli	Tirunelveli	8	52	31.66	77	35	7.49
7	SF 141	3917	Kuruchi kulam	Tirunelveli	Tirunelveli	8	52	53.03	77	34	59.05
8	168	3918	Vagaikulam	Tirunelveli	Tirunelveli	8	54	51.25	77	36	56.19
9	117	3949	Ukkirankottai	Tirunelveli	Tirunelveli	8	55	13.76	77	36	36.15
10	173	3986	Vagaikulam	Tirunelveli	Tirunelveli	8	55	0	77	37	22.1
11	170	3955	Vagaikulam	Tirunelveli	Tirunelveli	8	54	41.45	77	36	37.58
12	135	3948	Ukkirankottai	Tirunelveli	Tirunelveli	8	55	4.55	77	36	37.69
13	136	3959	Kanarpatti	Tirunelveli	Tirunelveli	8	53	5.5	77	38	45.7
14	V76	3954	Kuruchikulam	Tirunelveli	Tirunelveli	8	52	38.92	77	35	38.99
15	126	3981	Kattarankulam	Tirunelveli	Tirunelveli	8	55	17	77	41	9.7

16	120	3920	Melelanthaikulam	Sankarankoil	Tirunelveli	8	55	36.25	77	40	42.29
17	V213	3921	Kanarpatti	Tirunelveli	Tirunelveli	8	53	21.95	77	39	23.63
18	V202	3999	Kanarpatti	Tirunelveli	Tirunelveli	8	52	33.8	77	38	56.4



A.4. Technologies/measures >>

The project activity involves 18 numbers wind energy converters (WECs) of (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 47.5–51.5 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 WECs are manufactured by WWIL. This technology is manufactured at Daman manufacturing unit in India, operated and maintained by EIL. Hence no technology transfer is involved for project activity.

The other salient features of the state-of-art-technology are:

Turbine model	(E- 53)
Rated power	800 KW
Rotor diameter	53 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	12-29 rpm speed
Orientation	Upwind
No of Blades	3
Blade Material	Glass Fiber Epoxy reinforced
Gear box type	Gear less
Generator type	Synchronous generator
Braking	Aerodynamic
Output Voltage	400 V
Yaw System	Active yawing with 4 electric yaw drives with brake motor
Tower	74 m (concrete)

The project activity is new 14.4 MW wind power project, which consists of 18 machines of E-53 type Wind Energy Converters (WECs) of 800 KW capacities each. WWIL has secured and facilitated the technology transfer for wind based renewable energy generation from and has established a manufacturing plant at Daman in India, where along with other components the "Synchronous Generators" using "Vacuum Impregnation" technology are manufactured.

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, hence baseline scenario of the project activity is the grid based electricity system, which is also the pre-project scenario.

A.5. Parties and project participants >>

Party (Host)	Participants
India (Host)	Vaayu Renewable Energy (Tapti) Pvt. Ltd. (Private) (Private entity)

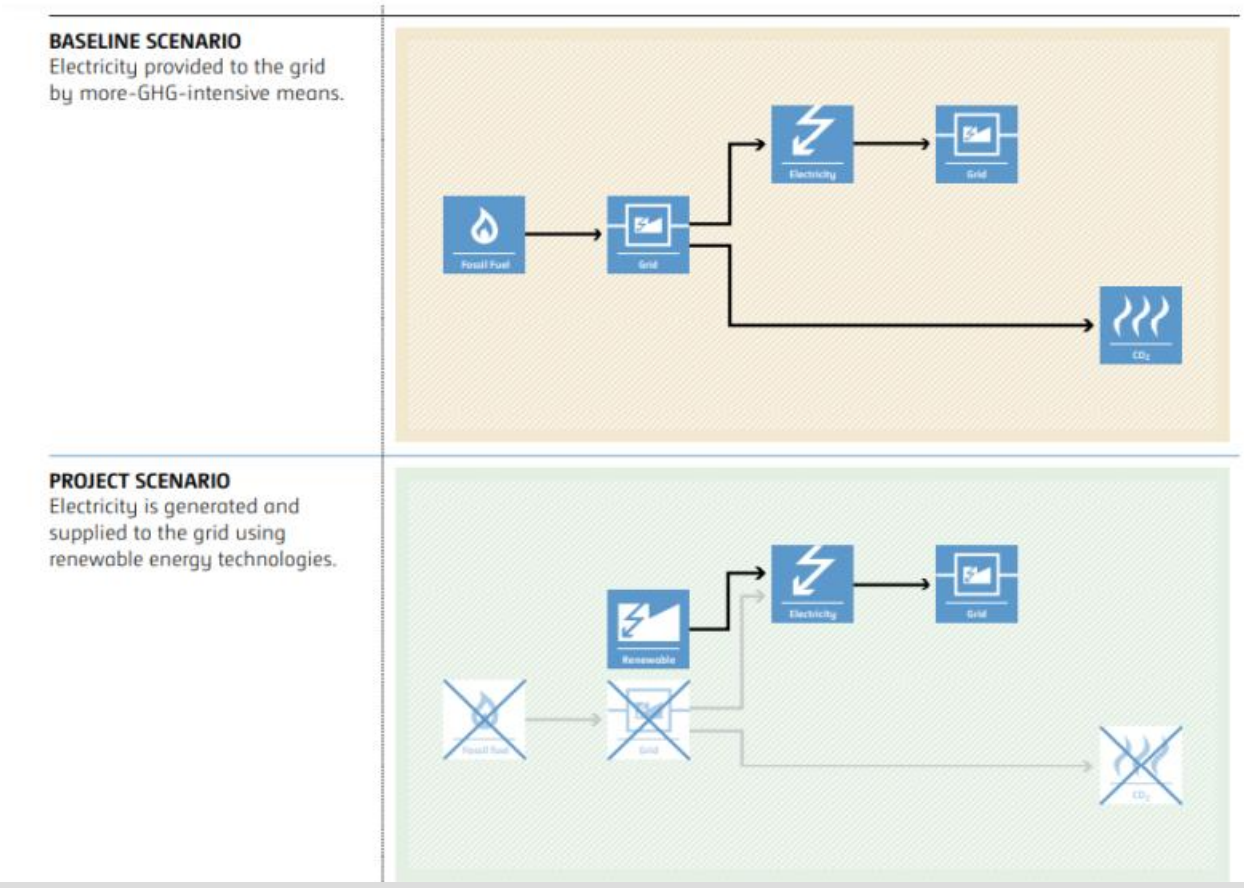
A.6. Baseline Emissions>>

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 consolidated methodology ACM0002 Version 22, 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:



A.7. Debundling>>

This Project is not a debundled component of a larger project activity.

SECTION B. Application of methodologies and standardized baselines

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

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

TYPE **- Renewable Energy Projects**

CATEGORY- ACM0002., Consolidated baseline methodology for grid-connected electricity generation from renewable sources -Version 22.0

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

Applicability Criteria.	**Applicability status**
1)This methodology is applicable to grid-connected renewable energy power generation project activities that: (a) Install a Greenfield power plant; (b) Involve a capacity addition to (an) existing plant(s); (c) Involve a retrofit of (an) existing operating plant(s)/unit(s); (d) Involve a rehabilitation of (an) existing plant(s)/unit(s), or (e) Involve a replacement of (an) existing plant(s)/unit(s). (f) Install a Greenfield power plant together with a grid-connected Greenfield pumped storage power plant. The greenfield power plant may be directly connected to the PSP or connected to the PSP through the grid.	The proposed project involves establishing a new grid-connected renewable wind power plant, confirming to the specified criteria.
2) In case the project activity involves the integration of a BESS, the methodology is applicable to grid-connected renewable energy power generation project activities that: (a)Integrate BESS with a Greenfield power plant; (b) Integrate a BESS together with implementing a capacity addition to (an) existing solar photovoltaic1 or wind power plant(s)/unit(s); (c) Integrate a BESS to (an) existing solar photovoltaic or wind power plant(s)/unit(s) without implementing any other changes to the existing plant(s); (d) Integrate a BESS together with implementing a retrofit of (an) existing solar photovoltaic or wind power plant(s)/unit(s). (e) Integrate a BESS together with a Greenfield power plant that is operating in coordination with a PSP. The BESS is located at site of the greenfield renewable power plant.	The project entails installing a new grid-connected renewable wind power project without the integration of a Battery Energy Storage System (BESS). Therefore, this condition does not apply to the project activity.
3)The methodology is applicable under the following conditions: (a) Hydro power plant/unit with or without reservoir, wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit; (b) In the case of capacity additions, retrofits, rehabilitations or replacements (except for wind, solar, wave or tidal power	The proposed project involves installing new wind power plants without integrating a Battery Energy Storage System (BESS). Thus, the mentioned criterion does not apply

capacity addition projects) the existing plant/unit started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion, retrofit, or rehabilitation of the plant/unit has been undertaken between the start of this minimum historical reference period and the implementation of the project activity; (c) In case of Greenfield project activities applicable under paragraph 7(a) above, the project participants shall demonstrate that the BESS was an integral part of the design of the renewable energy project activity (e.g., by referring to feasibility studies or investment decision documents); (d) The BESS should be charged with electricity generated from the associated renewable energy power plant(s). Only during exigencies2 may the BESS be charged with electricity from the grid or a fossil fuel electricity generator. In such cases, the corresponding GHG emissions shall be accounted for as project emissions following the requirements under section 5.4.4 below. The charging using the grid or using fossil fuel electricity generator should not amount to more than 2 per cent of the electricity generated by the project renewable energy plant during a monitoring period. During the time periods (e.g., week(s), months(s)) when the BESS consumes more than 2 per cent of the electricity for charging, the project participant shall not be entitled to issuance of the certified emission reductions for the concerned periods of the monitoring period. (e) In case the project activity involves PSP, the PSP shall utilize the electricity generated from the renewable energy power plant(s) that is operating in coordination with the PSP during pumping mode	
4)In case of hydro power plants, one of the following conditions shall apply: a)The project activity is implemented in an existing single or multiple reservoirs, with no change in the volume of any of reservoirs; or b)The project activity is implemented in an existing single or multiple reservoirs, where the volume of the reservoir(s) is increased and the power density calculated using equation (7) is greater than 4 W/m2; or c)The project activity results in new single or multiple reservoirs and the power density calculate equation (7), is greater than 4 W/m2. d)The project activity is an integrated hydro power project involving multiple reservoirs, where the power density of any of the reservoirs, calculated using equation (7), is lower than or equal to 4 W/m2, all of the following conditions shall apply. (i)The power density calculated using the total installed	The proposed project involves the installation of wind power plants/units. Hence, the mentioned criterion is not applicable.

capacity of the integrated project, as per equation (8), is greater than 4 W/m2; (ii) Water flow between reservoirs is not used by any other hydropower unit which is not a part of the project activity; (iii)Installed capacity of the power plant(s) with power density lower than or equal to 4 W/m2 are: a) Lower than or equal to 15 MW; and b) Less than 10 per cent of the total installed capacity of integrated hydro power project.	
5)In the case of integrated hydro power projects, project proponent shall: a)Demonstrate that water flow from upstream power plants/units spill directly to the downstream reservoir and that collectively constitute to the generation capacity of the integrated hydro power project; or b)Provide an analysis of the water balance covering the water fed to power units, with all possible combinations of reservoirs and without the construction of reservoirs. The purpose of water balance is to demonstrate the requirement of specific combination of reservoirs constructed under CDM project activity for the optimization of power output. This demonstration has to be carried out in the specific scenario of water availability indifferent seasons to optimize the water flow at the inlet of power units. Therefore this water balance will take into account seasonal flows from river, tributaries (if any), and rainfall for minimum five years prior to implementation of CDM project activity.	The proposed project activity involves the installation of wind power plants/units. Therefore, the mentioned criteria are not applicable.
6) In the case of PSP, the project participants shall demonstrate in the PDD that the project is not using water which would have been used to generate electricity in the baseline.	The proposed project activity involves installing wind power plants/units. Therefore, the specified criteria are not applicable.
7)The methodology is not applicable to: a)Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site; b) Biomass-fired power plants;	The proposed project activity involves installing wind power plants/units. Therefore, the specified criteria are not applicable.
8)In the case of retrofits, rehabilitations, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is “the continuation of the current situation, that is to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance	The proposed project activity involves installing wind power plants/units. Therefore, the specified criteria are not applicable.

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

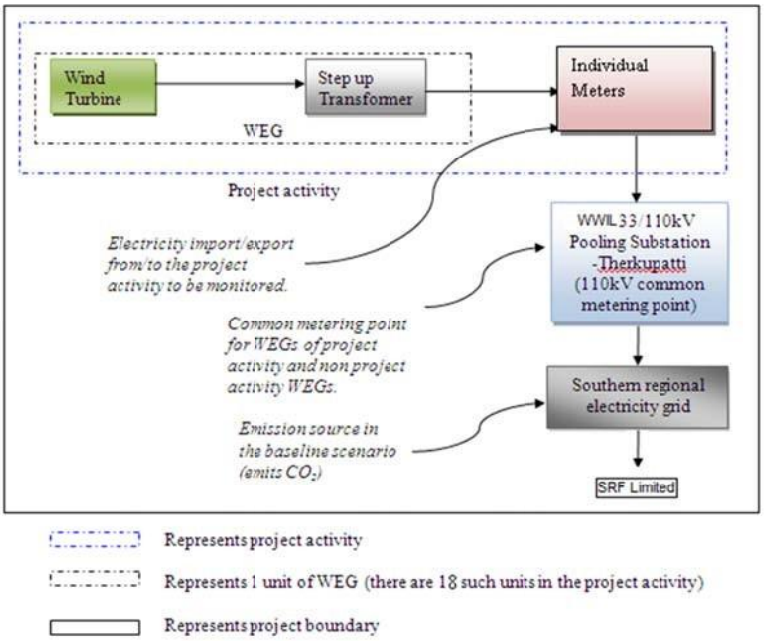
The project activity is registered under Clean Development Mechanism (CDM) project with registration number 7537.The crediting period of this project under CDM is 06/12/2012 to 05/12/2022. PP seeks verification under UCR from 01/01/2023 onwards, i.e., crediting period for UCR starts from 01/01/2023. Hence, there is no double counting for the said project.

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

According to the methodology ACM0002, version 22.0. the spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the project power plant is connected to.

The project boundary includes the WECs of the project activity, transformer, individual meters, WWIL substation & Indian which is final consumer of generated electricity.

A schematic of project boundary diagram is shown below.



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.

Source		GHGs	Included?	Justification/Explanation
Baseline scenario	Grid connected electricity generation	CO_2	Yes	In the baseline scenario, the electricity would have been sourced from the Indian grid which in turn would be connected to fossil fuel fired power plants which emit CO_2.
		CH_4	No	No methane is expected to be emitted.
		N_2O	No	No nitrous oxide is expected to be emitted.
Project Scenario	Greenfield wind energy conversion system	CO_2	No	The project activity does not emit any emissions.
		CH_4	No	No methane is expected to be emitted.
		N_2O	No	No nitrous oxide is expected to be emitted.

B.5. Establishment and description of baseline scenario >>

As per the approved consolidated methodology ACM0002. version - 22, 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 methodology ACM0002, version 22.0, emission reduction is estimated as difference between the baseline emission and project emission after factoring into leakage

Emission reductions are calculated as per methodology ACM0002, Version 22.0 Equation 17 :

$$ER_y = BE_y - PE_y \quad \textbf{(Eq. 1)}$$

Where,

ER_y = Emissions reductions in year y (t CO2)

BEy = Baseline emissions in year y (t CO2)
PEy = Project emissions in year y (t CO2)

Baseline Emissions

The baseline emissions as per methodology ACM0002, Version 22.0, para 57 ; encompass solely the CO2 emissions stemming from electricity generation in power plants displaced by the project activity. The methodology operates on the assumption that any electricity generation exceeding baseline levels would have originated from established grid-connected power plants and the integration of new grid-connected power plants.

The Baseline emissions as per methodology ACM0002, Version 22.0 Equation 11 in year y can be calculated as follows:

$BE_y = EG_{PJ,y} * EF_{grid,,y}$

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 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 :

$EG_{PJ,y} = EG_{facility,y}$

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 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[1] from 2013 to 2023 and Emission Factor of 0.757 tCO2/MWh for 2024 as a cautious estimate for Indian projects. The same emission factor is utilized for computing emission reductions for the Project Activity.

Project Emission:
Regarding project emissions, ACM0002 version 22.0 specifies that only emissions related to fossil

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

fuel combustion, emissions from the operation of geothermal power plants due to the release of non-condensable gases, and emissions from water reservoirs of hydroelectric plants should be taken into account. Since the project involves a wind power project, emissions from renewable energy plants are negligible
Hence (PEy = 0).

Leakage Emission:

Leakage, as outlined in ACM0002 version 22.0, para 5.6, is considered to be zero as there is no transfer of energy-generating equipment in the project activity
Hence (LEy = 0).

While the actual emission reduction achieved during the initial crediting period will be submitted during the first monitoring and verification, an ex-ante estimation is provided for reference.

Estimated Annual or Total baseline emission reductions (BEy)=18,251 CoUs /year (18,251 tCO_{2eq}/year)

Year	Net Generation	Baseline Emissions	Project Emissions	Leakage	Emission Reductions
	MWh	(tCO_2e)	(tCO_2e)	(tCO_2e)	(tCO_2e)
Year 1	23232.00	20908.80	0.00	0.00	20908.80
Year 2	23232.00	20908.80	0.00	0.00	20908.80
year 3	23232.00	17586.62	0.00	0.00	17586.62
Year 4	23232.00	17586.62	0.00	0.00	17586.62
Year 5	23232.00	17586.62	0.00	0.00	17586.62
Year 6	23232.00	17586.62	0.00	0.00	17586.62
Year 7	23232.00	17586.62	0.00	0.00	17586.62
Year 8	23232.00	17586.62	0.00	0.00	17586.62
Year 9	23232.00	17586.62	0.00	0.00	17586.62
Year 10	23232.00	17586.62	0.00	0.00	17586.62
Total Emission reduction	**232320**	**182510**	**0**	**0**	**182510**
Average Emission Reduction	23232	18251	0	0	18,251

B.6. Prior History>>

The project activity is registered under Clean Development Mechanism (CDM) project with registration number 7537.The crediting period of this project under CDM is 06/12/2012 to 05/12/2022. PP seeks verification under UCR from 01/01/2023 onwards, i.e., crediting period for UCR starts from 01/01/2023.

B.7. Changes to start date of crediting period >>

The start date of the crediting period under UCR is considered from 01/01/2023.

B.8. 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

B.9. Monitoring period number and duration>>

First Issuance Period: 02 years,00 months – 01/01/2023 to 31/12/2024

B.8. Monitoring plan>>

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

Data/Parameter	EG,p,j,y
Data unit	MWh
Description	Net electricity supplied to the grid by the Project activity.
Measurement methods and procedures	Data Type: Measured Monitoring equipment: Energy Meters are used for monitoring 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 . 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, $EG_{PJ,y} = EG_{Net,Export}$
Value Applied	23,232 MWh.(Annualized average value has been considered here for an ex-ante estimation only, whereas this is an-ex post parameter hence actual value shall be applied during monitoring and verification)
Monitoring frequency	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[2].
Purpose of data	For baseline emission calculations

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

Data / Parameter:	*EF*Grid,y
Data unit:	tCO2 /MWh
Description:	A "grid emission factor" refers to a CO2 emission factor (tCO2/MWh) which will be associated with each unit of electricity provided by an electricity system. The UCR recommends an emission factor of 0.9 tCO2/MWh for the period 2013 - 2023 and 0.757 tCO2/MWh from 2024 as a fairly conservative estimate for Indian projects. Hence, the same emission factor has been considered to calculate the emission reduction under conservative approach.
Source of data:	UCR CoU Standard Update: 2024 Vintage UCR Indian Grid Emission Factor Announced | by Universal Carbon Registry | Jan, 2025 | Medium
Measurement procedures (if any):	-
Monitoring frequency:	Ex-ante fixed parameter
QA/QC procedures:	For the calculation of Emission Factor of the grid
Any comment:	-

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