PROJECT CONCEPT NOTE

CARBON OFFSET UNIT (CoU) PROJECT

Title: 250 KW Wind Power Plant by eClouds Energy LLP, Tirunelveli,Tamil Nadu.

Version 1.0

Date: 5th Sep 2023

First CoU Issuance Period: 1st Jan 2013 to 30th Sep 2023
First Monitoring Period: 1st Jan 2013 to 30th Sep 2023
1st Crediting Period: 10 years 8 months

PROJECT CONCEPT NOTE (PCN)

CARBON OFFSET UNIT (CoU) PROJECT

BASIC INFORMATION	
Title of the project activity	250 KW Wind Power Plant by eClouds Energy LLP, Tirunelveli, Tamil Nadu
The scale of the project activity	Small Scale
Completion date of the PCN	5th Sep 2023
Project participants	Project Proponent (PP): eClouds Energy LLP. UCR Aggregator: eClouds Energy LLP. UCR ID: 980949808
Host Party	INDIA
Applied methodologies and standardized baselines	Type I (Renewable Energy Projects) UNFCCC Methodology Category AMS I.D.: "Grid connected renewable electricity generation" Ver 18 UCR Protocol Standard Baseline EF
Sectoral scopes	01 Energy industries (Renewable/Non Renewable Sources)
The estimated amount of total GHG emissionreductions	270 CoUs (tCO_2eq) per year from Wind power generation of 3,00,000 units.

SECTION A. Description of project activity

The proposed project is titled under UCR is "250KW Wind Power Project by eClouds Energy LLP", which is a wind power project located in the state of Gujarat (India). The project purpose is to install the plant considering all factors such as wind speed, wind direction, land availability, proximity to electrical grids, and potential environmental impacts. After obtaining the necessary permits and approvals from local authorities, environmental agencies, and relevant stakeholders, the power generated from the project is for third party consumption. The project adheres to regulatory guidelines and environmental standards. The wind project, though smaller in scale compared to larger wind farms, can still make a meaningful contribution to local renewable energy generation, community development, and environmental sustainability.

A.1. Purpose And General Description Of Carbon Offset Unit (CoU) Project Activity:

The project **M/s. eClouds Energy LLP** is located in SF.NO.708(P), Mayamankurichy village, Alangulam Taluk, District: Tirunelveli, State: Tamil Nadu, Country: India.(079224723272)

The details of the registered project are as follows:

Purpose of the project activity:

The ecology can benefit greatly from the usage of wind energy as a substitute energy source. Wind energy doesn't release any carbon emissions, in contrast to fossil fuels. This is a crucial element that makes it far more eco-friendly than conventional energy sources. As a result, can lessen the consequences of climate change.

The proposed project activity of 250KW is the installation and operation of a wind power plant in Mayamankurichy village, Alangulam Taluk, District: Tirunelveli, State: Tamil Nadu, Country: India.

S.NO	VILLAGE	DISTRICT	TYPE	TOTAL INSTALLED CAPACITY KW	COMMISSIONING DATE
1	Mayamankurichy	Tirunelveli	Ground mounted	250 KW	13th Aug 2010

According to the ex-ante estimate, this project will produce about 3,00,000 units of power annually, assuming a PLF of 14% on average. The Wind Turbine Generator (WTG) project activity was commissioned on 13 Aug 2010.

The project activity is anticipated to reduce CO_2 emissions by 270 tCO_2e per year on average, with the actual emission reduction achieved during the first CoU term to be presented as part of the initial monitoring and verification. The project activity has been helping in green house gas (GHG) emission reduction by using renewables resources (wind energy) for generating power which otherwise would have been generated using grid mix power plants, which is dominated by fossil fuel based thermal power plant.

Since the project activity generates electricity through wind energy, a clean renewables energy source it will not cause any negative impact on the environment and thereby contributes to climate change mitigation efforts.

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

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

- Social benefits:

The constructions, installation, and maintenance of the wind turbines can create job opportunities for local residents. This can include technicians, engineers, electricians, and administrative staff. The project may offer training and skill development for local workers enabling them to acquire expiries in renewable energy technologies. These skills can valuable for future job opportunities. If in wind involves partnership with local landowners, they can receive lease payments for hosting turbines on their land. This additional income can support landowners and contribute to the local economy. By generating renewable energy locally, the community can reduce its dependence on external energy sources, contributing to greater energy security. Wind energy contributes to reduce air pollutions by displaying the need for fossil fuel based power generation.

- Environmental benefits:

The project aims to generate power through a wind-based facility that emits absolutely no greenhouse gases (GHG) or harmful pollutants like SOx, NOx, and SPM, typically associated with conventional thermal power generation. By harnessing the clean and renewable energy of wind, the project takes an active role in mitigating environmental emissions. Over and above, utilizing wind energy for electricity generation promotes responsible resource management, reducing our dependence on fossil fuels and safeguarding precious natural resources from rapid depletion. Notably, the project's impact on land, water, air, and soil is minimal, ensuring little or no adverse effects on the surrounding environment while actively contributing to the overall well-being.

- Economic benefits:

The project is a clean technology investment decided based on carbon revenue support, which signifies flows of clean energy investments. The project activity required temporary and permanent, skilled and semi-skilled manpower at the project location; this created additional employment opportunities in the region. The electricity replaced in grid is available for nearby area which directly and indirectly improves the economy and life style of the area. In additional, success of these kind of projects will be provided new opportunities for industries and economic activities to be setup in the area. Apart from getting better employment opportunities, the local people will get better prices for their land, thereby resulting in overall economic development.

A.3 Location of project activity >>

Map showing the location of the project activity:

Machine No: 079224723272

Country: India

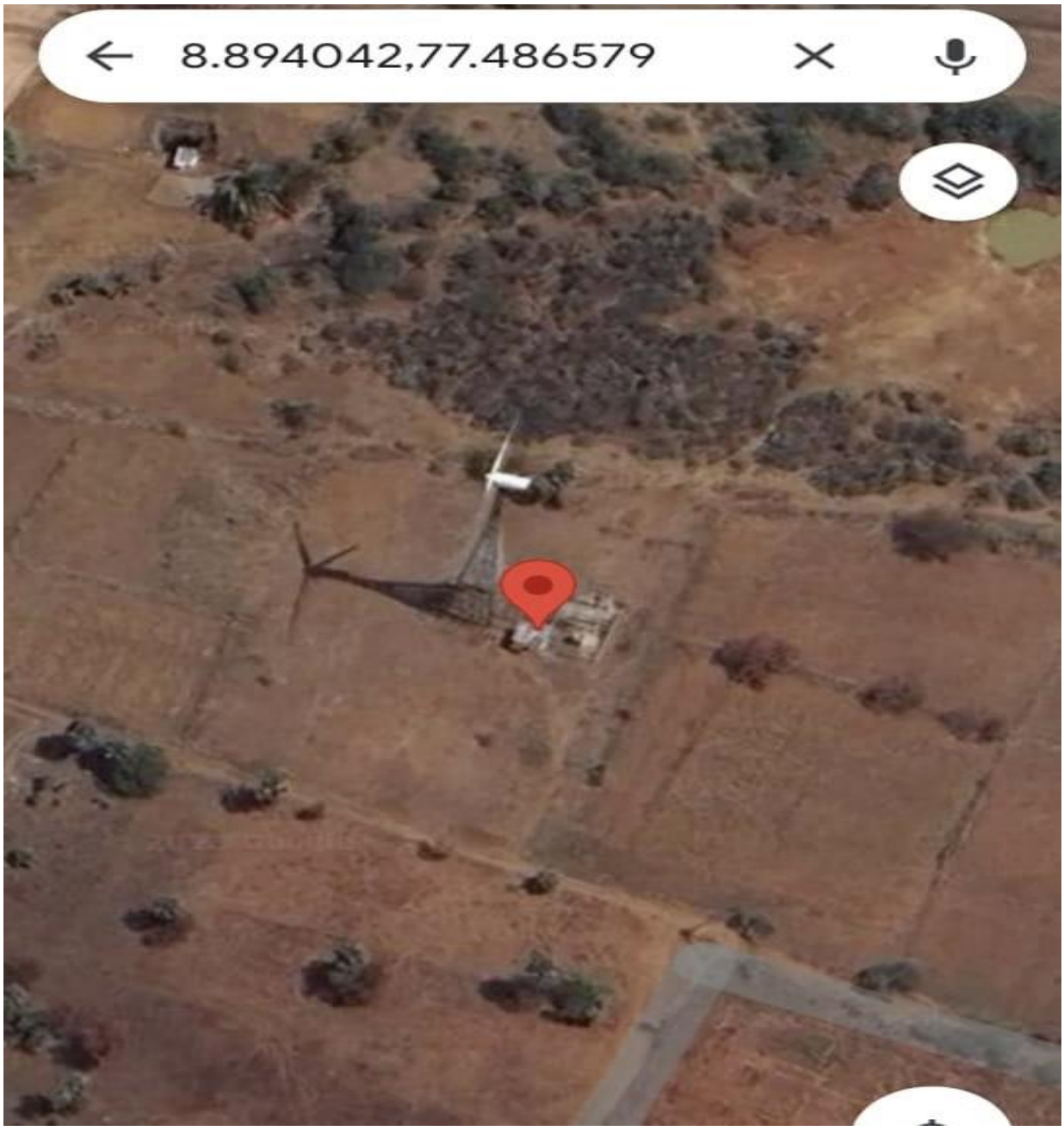
District: Tirunelveli

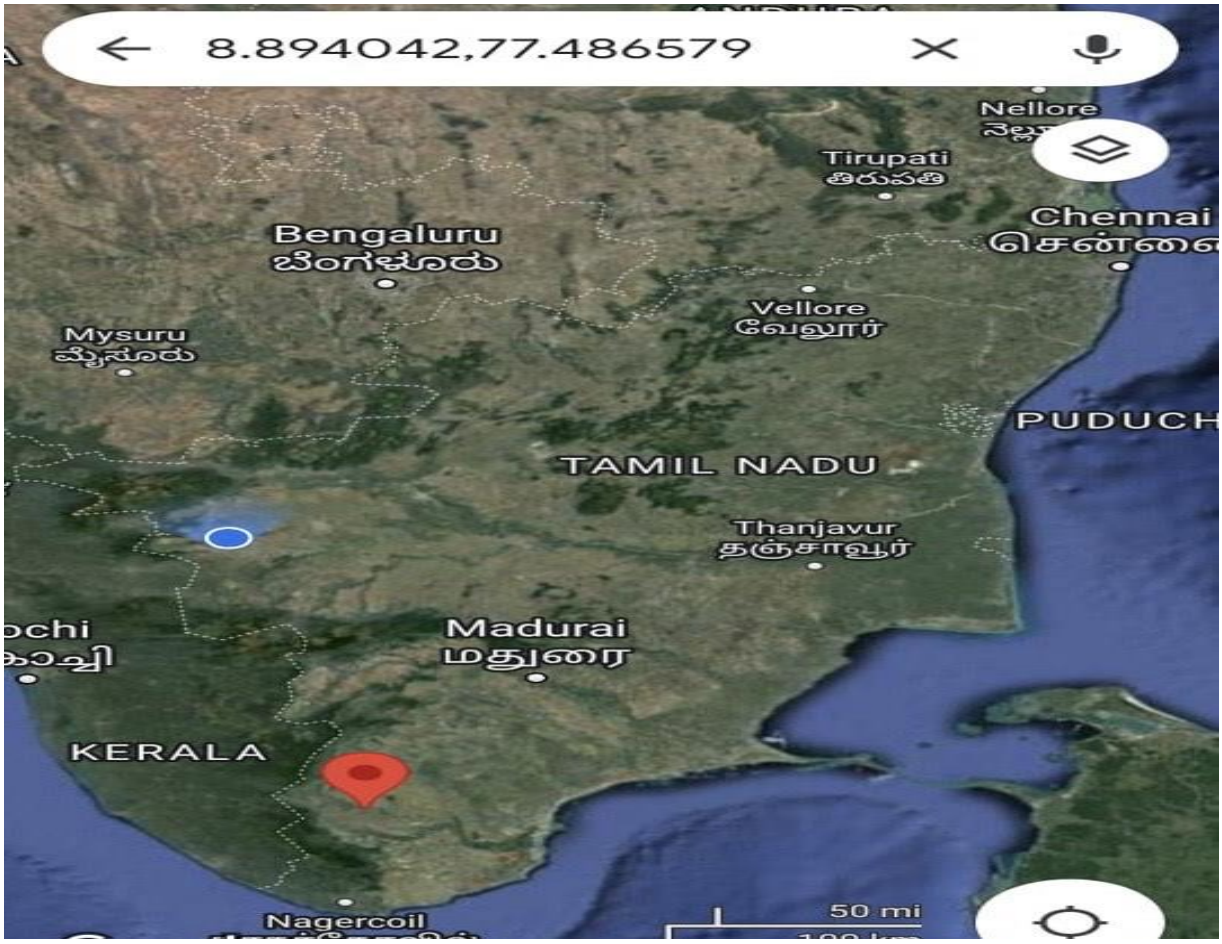
Village: Mayamankuruchi

State: Tamil Nadu.

Latitude: 8.8940420 N

Longitude: 77.4865790 E





A.4 Technologies/measures:

The project activity is using clean renewable wind energy to produce electricity. The applied technology is considered to be one of the most environment friendly technologies available as the operation of the wind energy generators does not emit any GHGs or any other harmful gases unlike the operation of conventional power plants.

The technical specifications of the key components that are used for baseline calculations or methodology selection limits as follows:

Particulars	**Machine**
Machine Number	079224723272
Maximum Power Output	250KW
Diameter	28.5 M
No. of Blades	3

Swept Area	638 SQ.M
Rotor Speed Range	46 REV/MIN
Rotational direction	CLOCK WISE VIEWD
Tip speed @ rated power	-
Orientation	-
Speed regulation	44 RPM/MIN
Aerodynamic brakes	NIL
Pitch System	
Principle	STALL PITCH REGULATION
Actuation	-

A.5 Parties and project participants >>

Party (Host)	Participants/Aggregator
India	**Project Owner: M/s.eClouds Energy LLP,** #81 West Venkatasamy Road, R.S.Puram, Coimbatore 641002, Tamil Nadu INDIA **Project Aggregator: M/s.eClouds Energy LLP,** #81 West Venkatasamy Road, R.S.Puram, Coimbatore 641002, Tamil Nadu INDIA UCR ID: 980949808 Email: nocarbon@ecloudsenergy.com

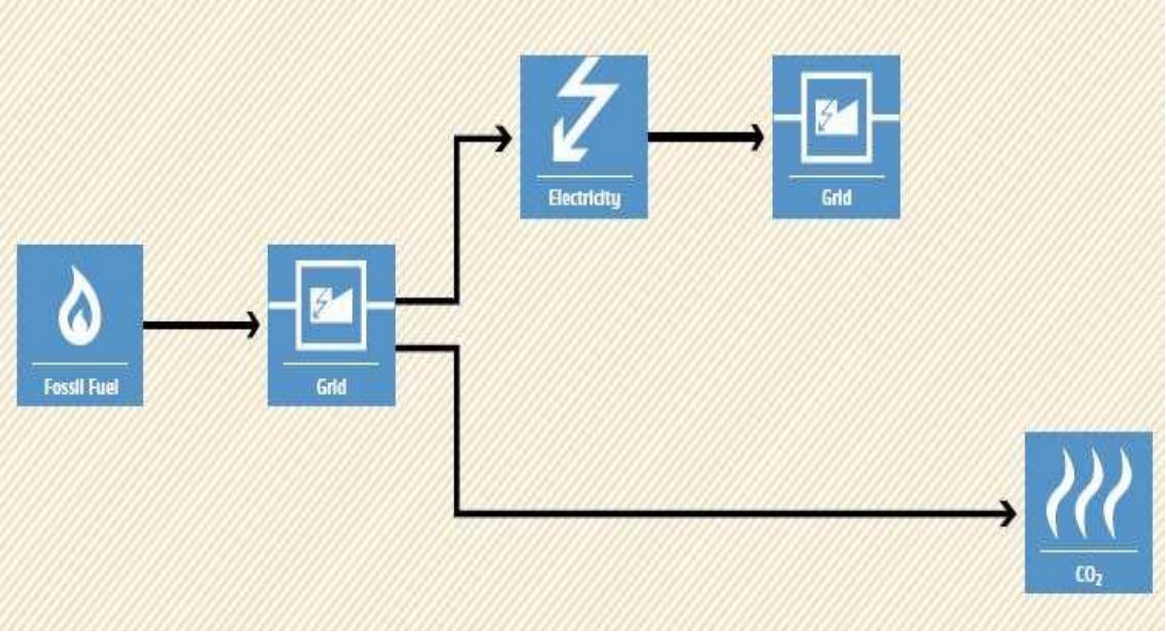
A.6 Baseline Emissions>>

- **Grid**

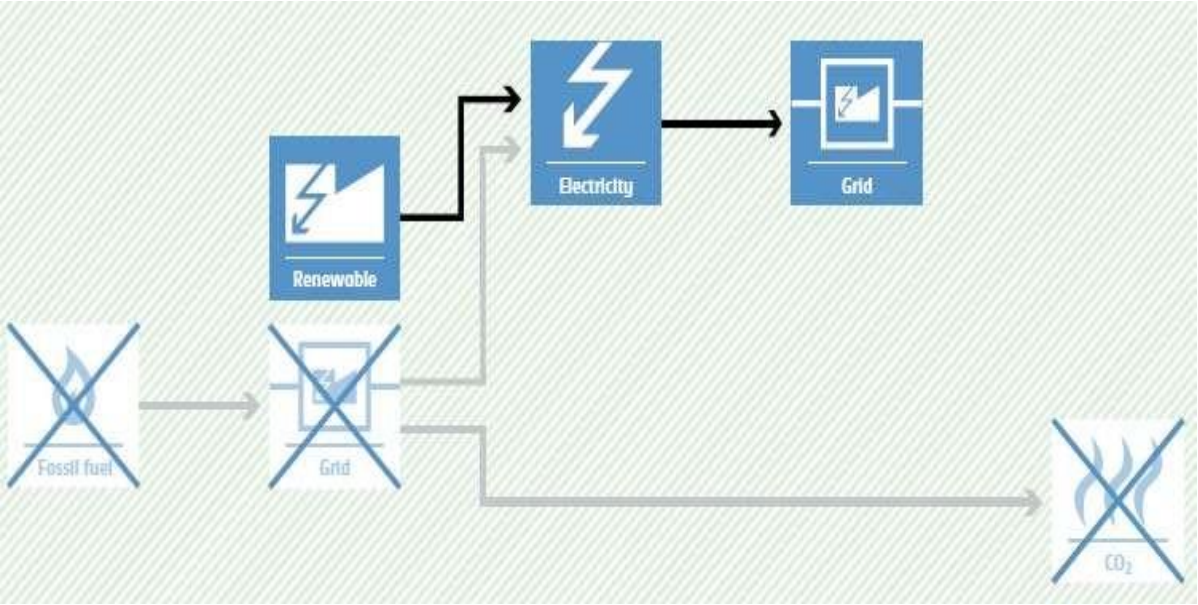
The same quantity of electricity would have been imported from the National grid (which is connectedto the unified Indian Grid system) in the absence of the project activity, which is carbon intensive becauseit is primarily produced from fossil fuel-based power plants.

Schematic diagram showing the baseline scenario:

Baseline Scenario:



Project Scenario:



A.7 Debundling:

This project activity is not a 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:
I - Renewable Energy Projects

CATEGORY:
AMS. I.D. (Title: "Grid connected renewable electricity generation", version 18)

B.2 Applicability of methodologies and standardized baselines >>

Building and operating a new wind power facility that will provide grid-connected electricity are part ofthis project activity. Due to its installed capacity of 250 KW, the project activity will be categorized as a small-scale project activity under Type-I of the Small-Scale approach. The following discussion on howthe project eligibility standard status meets the requirements of applied to the AMS-I.D., version 18 methodology:

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 involves setting up of a grid connected renewable energy (wind) generation plant for selling it to the identified consumers. Therefore, it meets the requirement of point (b) of criteria 1.
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 Greenfieldplant /unit. Hence the project activitymeets 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 existing reservoir, with no change in the volume of the reservoir; or (b) The project activity is implemented in existing reservoir, where the volume of the reservoir(s) is increased and the power density as per definitions given in the project emissions section, is greater than 4 W/m2. (c) (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 installation of Wind Turbine Generator (WTG); 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 250 KW wind power project, i.e., only component is renewable power project below 15 MW, thus the criterion is not applicable to this project activity.
5. Combined heat and power (co-generation) systems are not eligible under this category	The project is a wind power project and thus the criterion is not applicable to this project activity.
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.	This is a green field project and no expansion and retrofitting were carried out. Hence 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 proposed project is a greenfield 250 KW wind power project, i.e., the only component is a renewable power project below 15 MW, thus the criterion is not applicable to this 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" shall be explored.	The proposed project is a greenfield 250 KW wind power project; hence, this criterion is not applicable to this project activity.
9. In case biomass is sourced from dedicated plantations, the applicability criteria in the tool "Project emissions from cultivation of biomass" shall apply.	No biomass is involved, the project is only a wind power project and thus the criterion is not applicable to this project activity.

B.3 Applicability of double counting emission reductions >>

Due to the following factors, there is no double accounting of emission reductions in the project activity:

- Based on its geographic location, the project may be uniquely identified.
- The project has a specific connection point and commissioning certificate.
- The project is linked to energy meters that are devoted to the project developer's consumptionpoint.

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

The physical location of the wind power plant, the energy metering hardware, and the associatedlocal electrical infrastructure are all included in the project perimeter.

The table below provides an overview of the emissions sources included or excluded from the project boundary for determination of baseline and project emissions.

Source		**Gas**	**Included?**	**Justification/Explanation**
Baseline	Grid-connected electricity generation	**CO_2**	**Yes**	**Main emission source**
		CH_4	No	Minor emission source
		N_2O	No	Minor emission source
		Other	No	No other GHG emissions were emitted from theproject

Project	Greenfield Wind Electric power project Activity	CO_2	No	No CO_2 emissions are emitted from the project
		CH_4	No	Project activity does not emit CH_4
		N_2O	No	Project activity does not emit N_2O
		Other	No	No other emissions are emitted from the project

B.5 Establishment and description of baseline scenario (UCR Standard or Methodology):

Net GHG Emission Reductions and Removals

Thus, **ERy = BEy – PEy – Ley**

Where:
ERy = Emission reductions in year y (tCO2/y) BEy = Baseline Emissions in year y (t CO2/y) PEy = Project emissions in year y (tCO2/y) LEy = Leakage emissions in year y (tCO2/y)

Baseline Emissions:

Baseline emissions include only CO2 emissions from electricity generation in power plants that are displaced due to the project activity. The methodology assumes that all project electricity generationabove 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:
BEy = EGPJ,y × EFgrid,y

Where,
BEy : Baseline emissions in year y (t CO2)
EGPJ,y : Quantity of net electricity generation that is produced and fed into the grid as aresult of the implementation of the CDM project activity in year y (MWh)
EFgrid,y : UCR recommended emission factor of 0.9 CO2/MWh has been considered. (Reference: General Project Eligibility Criteria and Guidance, UCR Standard, page 4).

Project Emissions:

Since the project activity is a wind power project, project emission for renewable energy plants is nil.

Thus. PEy = 0.

Leakage:

As per paragraph 42 of AMS-I.D. version-18, '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-generatingequipment, and therefore the leakage from the project activity is considered zero.

Hence, Ley=0

The actual emission reduction achieved during the first CoU period shall be submitted as a part ofThe first is monitoring and verification. However, for an ex-ante estimation, the following calculation has been submitted:

Estimated annual baseline emission reductions (BEy)

Machine No: 079224723272

= 3,00,000 KWh/year × 0.9 tCO2/MWh

= 270 tCO2e/year (i.e., 270 CoUs/year)

B.6. Prior Historv:

The project activity is a small-scale wind project and was not applied under any other GHG mechanism prior to this registration with UCR.

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

There has been no claim of a reduction in greenhouse gas emissions as of the commencement date ofcrediting under UCR, which is 1st Jan 2013 and 30th Sep 2023.

B.8 Permanent changes from PCN monitoring plan, applies methodology, or applied standardized baseline >>

The implemented technique and registered PCN monitoring plan have not undergone any long-term
alterations.

B.9 Monitoring period number and duration >>

First Issuance Period (079224723272): 10 years, 08 months – 1st Jan 2013 to 30th Sep 2023

B.10 Monitoring plan >>

The amount of net electricity supplied to the grid is one of the key metrics tracked.Data and Parameters available at validation (ex-ante values):

Data / Parameter	UCR recommended emission factor
Data unit	tCO_2 /MWh
Description	A "grid emission factor" refers to a CO_2 emission factor (tCO_2/MWh) that 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. Hence, the same emission factor has been considered to calculate the emission reduction under a conservative approach.
Source of data	UCR CoU Standard Aug 2022 (Updated Ver.6)
Value applied	0.9
Measurement methods and procedures	
Monitoring frequency	Ex-ante fixed parameter
Purpose of Data	For the calculation of the Emission Factor of the grid

Data and Parameters to be monitored (ex-post monitoring values):

Parameter	$EG_{PJ,y}$
Data unit	MWh
Description	Net electricity supplied to the NEWNE grid facility by the project activity.
Source of data Value(s) applied	Energy generation report

Procedures	The Net electricity generation by the wind power plant is recorded by the project proponent in the record logs. At the end of every month, Energy bills generated based on the total monthly electricity exported to the grid.
Monitoring frequency	Monthly
Purpose of data	To estimate Baseline Emission
Value applied:	(Ex-ante estimate)
QA/QC procedures applied:	Calibration of the Main meters will be carried out once in five (5) years as per National Standards (as per the provision of CEA, India) and faulty meters will be duly replaced immediately as per the provision of power purchase agreement.
Any comment:	Data will be archived electronically for a period of 36 months beyond the end of crediting period.