# Monitoring Report

CARBON OFFSET UNIT (CoU) PROJECT


**Title:** 1.25 MW Wind Power Project activity by Naroda Enviro Projects Ltd.

Version 2.0

Date 21/09/2024

First CoU Issuance Period: 11 years, 0 months

Monitoring Period : 01/01/2013 to 31/12/2023

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

| Monitoring Report | |
|---|---|
| Title of the project activity | 1.25 MW Wind Power Project activity by Naroda Enviro Projects Ltd |
| UCR Project Registration Number | 435 |
| Version | 2.0 |
| Completion date of the MR | 10/07/2024 |
| Monitoring period number and duration of this monitoring period | Monitoring Period Number: 01<br>Duration of this monitoring Period: (first and last days included (01/01/2013 to 31/12/2023) |
| Project participants | Green Shift Climate Solutions (Representor)<br>Naroda Enviro Projects Ltd (Project Proponent) |
| Host Party | India |
| Applied methodologies and standardized baselines | Applied Baseline Methodology:<br>AMS-I. D: "Grid connected renewable electricity<br>generation", version 18 |
| Sectoral scopes | 01 Energy industries (Renewable/Non-Renewable Sources) |
| Estimated amount of GHG emission reductions for this monitoring period in the registered PCN | 2013 : 1,675 CoUs (1,675 tCO2eq) |
| | 2014 : 1,785 CoUs (1,785 tCO2eq) |
| | 2015 : 1,849 CoUs (1,849 tCO2eq) |
| | 2016 : 1,827 CoUs (1,827 tCO2eq) |
| | 2017 : 1,843 CoUs (1,843 tCO2eq) |
| | 2018 : 1,737 CoUs (1,737 tCO2eq) |
| | 2019 : 1,809 CoUs (1,809 tCO2eq) |
| | 2020 : 1,578 CoUs (1,578 tCO2eq) |
| | 2021 : 1,613 CoUs (1,613 tCO2eq) |
| | 2022 : 1,503 CoUs (1,503 tCO2eq) |
| | 2023 : 1,622 CoUs (1,622 tCO2eq) |
| **Total:** | 18,841 CoUs (18,841 tCO2eq) |

## SECTION A. Description of project activity

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

The project 1.25 MW Wind Power Project activity by Naroda Enviro Projects Ltd (Herein after called as Project Proponent "PP") is a wind power project located at Village-Varvada, Taluka-Dwarka, District Jamnagar, State Gujarat, Country India. The Project is an operational activity with continuous reduction of GHG, currently being applied under "Universal Carbon Registry" (UCR).

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

The project activity aims to harness kinetic energy of wind (renewable source) to generate electricity. The net generated electricity from the project activity is for captive consumption by the project proponent. Wheeling agreement is signed between PP and Uttar Gujarat VIJ Company Limited-UGVCL.
In pre-project scenario the PP was importing the required electricity from the state utility i.e., DGVCL (is a part of regional grid, earlier known as NEWNE grid) to meet its captive requirement of electrical energy. Currently, NEWNE grid is connected to large numbers of fossil fuel-based power plants. Hence, project activity is displacing the gross electricity generation i.e., XYVZ MWh from the NEWNE grid, which otherwise would have been imported from the NEWNE grid.
The project activity doesn't involve any GHG emission sources. The annual and the total CO2e emission reduction by the project activity over the defined monitoring period is as per Annexure I.

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

The project activity involves installation and operation of Wind Turbine Generator (WTGs) capacity of 1250 kW which is manufactured and supplied by Suzlon Ltd. The average life time of the generator is around 20 years as per the equipment supplier specification.
Wind is used to produce electricity using the kinetic energy created by air in motion. This is transformed into electrical energy using wind turbines or wind energy conversion systems. Wind first hits a turbine's blades, causing them to rotate and turn the turbine connected to them. That changes the kinetic energy to rotational energy, by moving a shaft which is connected to a generator, and thereby producing electrical energy through electromagnetism.

Below is the description of different components of a Wind Turbine Generator.

1. Main Tower: The main support tower is made of steel, finished in a number of layers of protective paint to shield it against the elements. The tower is tall enough to ensure the rotor blade does not interfere with normal day-to-day operations at ground level.
2. Rotar Blades: The rotor blades are the three (usually three) long thin blades that attach to the hub of the nacelle. These blades are designed to capture the kinetic energy in the wind as it passes, and convert it into rotational energy.
3. Nacelle: The nacelle is the 'head' of the wind turbine, and it is mounted on top of the support tower. The rotor blade assembly is attached to the front of the nacelle. It contains all the major parts of the WEG.
4. Hub: The hub of the wind turbine is the component that connects the blades to the main shaft and ultimately to the rest of the tower. The hub transmits and withstand all the loads generated by the blades.

5. Main Shaft: It is a piece of metal in the form of a tube which constitutes the most important spinning constituent since it conveys the energy from the wind turbine blades to the other parts of the wind turbine.
6. Gear Box: A gearbox is often used in a wind turbine to increase the rotational speed from a low-speed main shaft to a high-speed shaft connecting with an electrical generator. Gears in wind turbine gearbox are subjected to severe cyclic loading due to variable wind loads that are stochastic in nature.
7. Brake: A wind turbine rotor brake is a brake placed next to the gearbox that reduces the rotational speed of the blade assembly, fixes the blade so that it does not rotate in the case of power transmission maintenance or power generator rest, and in an emergency.
8. Turbine generator: The turbine generator is the component that turns the rotational energy in the high-speed output shaft from the gearbox into an electrical current. The electrical principle of electromagnetic induction shows that while a magnet is moving past a coil of wire, an electric current is created (or "induced") in the wire.

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

UCR Project ID: 435
Start Date of Crediting Period: 01/01/2013
Project Commissioned: 25/01/2012

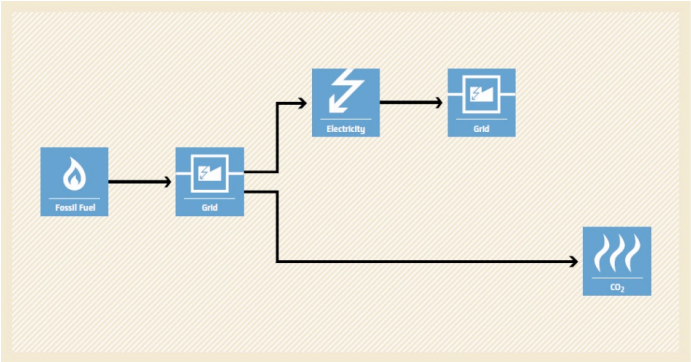
d) Total GHG emission reductions achieved or net anthropogenic GHG removals by sinks achieved in this monitoring period>>

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 | 31/12/2023 |
| Total ERs generated ($tCO_{2eq}$) | 18,841 tCO2eq |
| Leakage | 0 |

e) Baseline Scenario>>

As per the approved consolidated methodology AMS-I.D. 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".

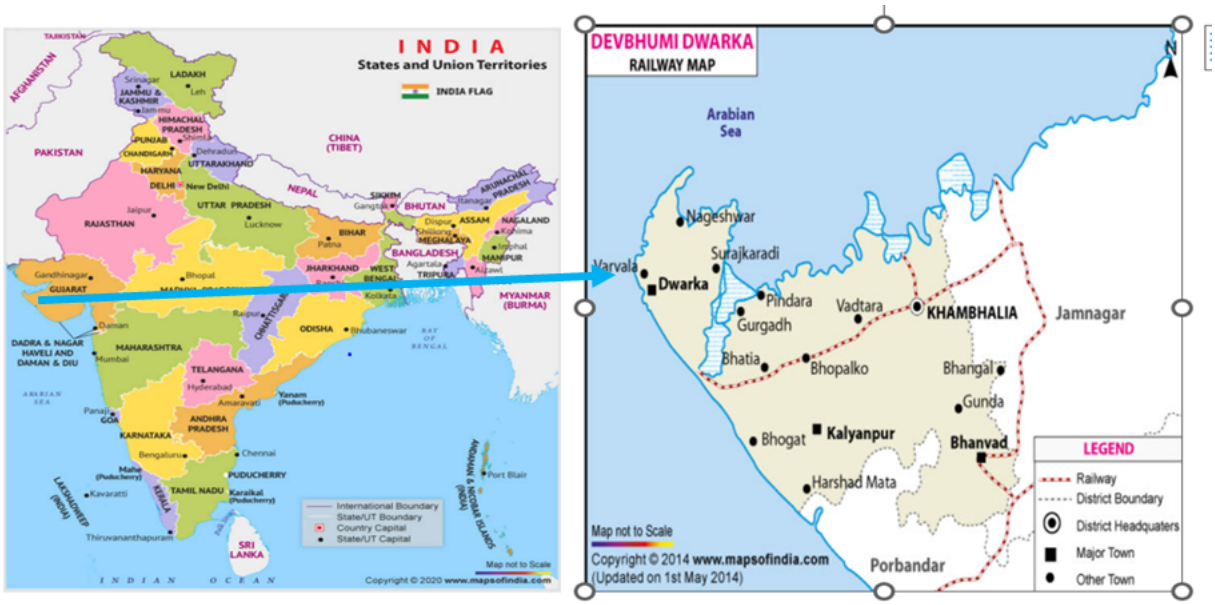



## A.2. Location of project activity>>

Country: India
District: Jamnagar
Village: Varvada
Taluka: Dwarka
State: Gujarat

The project location is situated at village-Nana Khadba, District-Jamnagar in the state of Gujarat. The nearest airport is in Jamnagar. The project site is well connected by district and village roads to the nearest town. The geographic co-ordinates of the project locations have been provided below.

The geographic co-ordinate of the project locations is 22°18'02.6"N 68°59'26.3"E




(Courtesy: google map and images)

## A.3. Parties and project participants >>

| Party (Host) | Participants |
|---|---|
| India | **GreenShift Climate Solutions (Representator)**<br>Contact Person: Dilesh Bhatt<br>Mobile : 8735000438<br>Address : 402, Akhand Anand avenue, Anand Nagar, charwda road, Vapi 396 191<br><br>**Naroda Enviro Projects Ltd (Developer)**<br>Plot no 512-515, Phase-1, GIDC, Naroda,<br>Ahmedabad. 380 330 |

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

**SECTORAL SCOPE** - 01 Energy industries (Renewable/Non-Renewable Sources)

**TYPE** - Renewable Energy Projects

**CATEGORY -** AMS-I. D: "Grid connected renewable electricity generation", version 18

## A.5. Crediting period of project activity >>

Start Date of Crediting Period: 01/01/2013 (11 years)

Length of the crediting period corresponding to this monitoring period: 11 years and 0 months

i.e., 01/01/2013 to 31/12/2023 for project (Both the dates are inclusive).

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

Name: Dilesh Bhatt
Contact No: +91 8735000438
E-Mail: greenshiftclimatesolutions@gmail.com

## 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 project consists of 1 WTG with of capacity of 1250 kW. Wind Turbine have WTG ID as SEL/1250/2011-12/2436 by Gujarat Energy Development Agency (GEDA), Government of Gujarat. The project generates clean energy by utilizing the kinetic energy of flowing wind.

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

Wind Turbines are manufactured and supplied by Suzlon (India) Ltd with an aggregate installed capacity of 1.250 MW. The connectivity of the WTGs is to a Central Monitoring Station (CMS) through high-speed WLAN modem or fibre optic cable which helps in providing real time status of the turbine at CMS with easy GUI (Graphical User Interface) and ability to monitor the functioning of the turbine from CMS. The life time of the WTG is 20 years as per manufacturer specifications.

| Specification | Value |
|---|---|
| Turbine Model | Suzlon S-66 Mark-II |
| Rated Power | 1,250 kW |
| Rotor diameter | 66 m |
| Hub Height | 74.5 m |
| Turbine Type | Direct Driven, Horizontal axis wind turbine. |
| Power regulation | Independent pitch system for each blade |
| Cut in wind speed | 4 m/s |
| Rated wind speed | 12 m/s |
| Cutout Wind Speed | 20 m/s |
| Extreme wind speed | 52.5 m/s |
| Rated Rotational speed | 20.62 rpm |
| Operating range rotor speed | 12-20 rpm |
| Orientation | Upwind |
| No of Blades | 3 Blades |
| Blade Material | Epoxy bonded fiber glass |
| Gear box type | One planetary stage and two helical stages |
| Generator type | Dual speed induction generator(asynchronous) |
| Braking | Aerodynamic braking |

| | |
|---|---|
| Output Voltage | 690 V AC (phase to phase) |
| Yaw System | Electric asynchronous motor, electric motor brake (spring applied), 5 stage planetary gear box with output pinion |
| Tower | 72 m |

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

Indian economy is highly dependent on "Coal" as fuel to generate energy and for production processes. Thermal power plants are the major consumers of coal in India and yet the basic electricity needs of a large section of population are not being met. This results in excessive demands for electricity and places immense stress on the environment.

Changing coal consumption patterns will require a multi-pronged strategy focusing on demand, reducing wastage of energy and the optimum use of renewable energy (RE) sources. This project is a greenfield activity where grid power is the baseline. The renewable power generation is gradually contributing to the share of clean & green power in the grid; however, grid emission factor is still on higher side which defines grid as distinct baseline.

The Government of India has stipulated following indicators for sustainable development in the interim approval guide lines 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 benefits:**

The project would help in generating direct and indirect employment benefits accruing out of ancillary units for manufacturing towers for erection of the Wind Turbine Generator (WTG) and for maintenance during operation of the project activity. It will lead to development of infrastructure around the project area in terms of improved road network etc. and will also directly contribute to the development of renewable infrastructure in the region.

**Environmental benefits:**

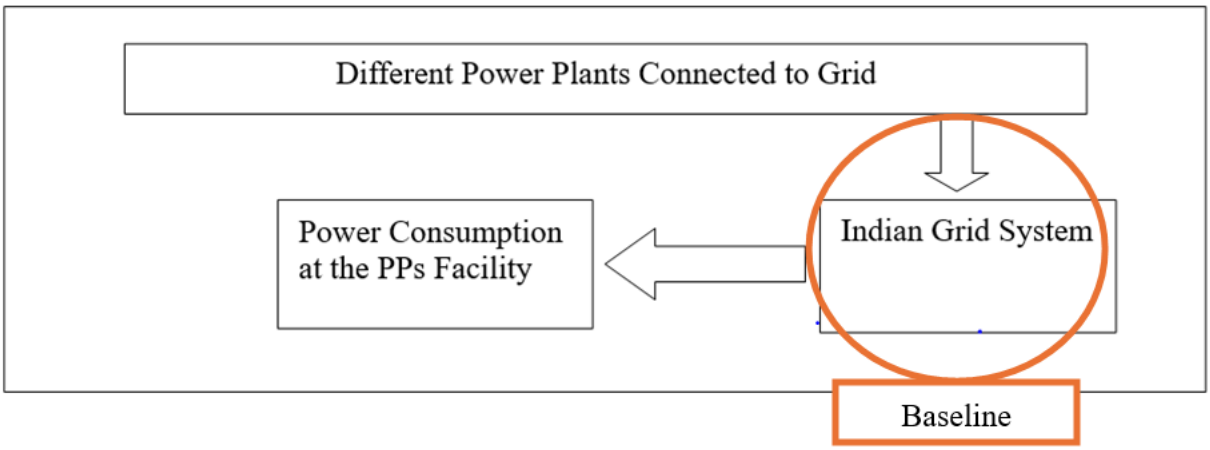
The project activity will generate power using zero emissions wind- based power generation facility which helps to reduce GHG emissions and specific pollutants like SOx, NOx, and SPM associated with the conventional thermal power generation facilities. The project utilizes wind energy for generating electricity which is a clean source of energy. The project activity will not generate any air pollution, water pollution or solid waste to the environment which otherwise would have been generated through fossil fuels. Thus, the project causes no negative impact on the surrounding environment contributing to environmental well-being.

**Economic benefits:**

The project is a clean technology investment decided based on carbon revenue support, which signifies flows of clean energy investments into the host country. The project activity requires temporary and permanent, skilled and semi-skilled manpower at the project location; this will create additional employment opportunities in the region. The generated electricity will be utilised for captive consumption, thereby reducing the demand from the grid. In addition, improvement in infrastructure will provide 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.

## 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.




## B.4. Debundling>>

This project activity 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 >>

**Sectoral Scope:** 01 Energy industries (Renewable/Non-Renewable Sources)

**TYPE I –** Renewable Energy Projects

**Applied Baseline Methodology: 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 wind power based power project for supply to grid . The project activity has installed capacity of 1.25 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 |
|---|---|
| 1. This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass:<br>(a) Supplying electricity to a national or a regional grid; or<br>(b) Supplying electricity to an identified consumer facility via national/regional grid through a contractual arrangement such as wheeling. | The project activity is a 1.25 MW Wind based power generation project that generates and wheels (supply) renewable electricity through NEWNE grid (currently identified as Unified Indian grid system) to its unit for captive consumption as per wheeling agreement signed between UGVCL and PP. Hence, the project activity meets the given applicability criterion as well as satisfies the applicability illustration mentioned in AMS-I.D. version 18 |
| 2. This methodology is applicable to project activities that:<br>(a) Install a new power plant at a site where there was no renewable energy power plant operating prior to the implementation of the project activity (Greenfield plant);<br>(b) Involve a capacity addition in (an) existing plant(s);<br>(c) Involve a retrofit of (an) existing plant(s); or<br>(d) Involve a replacement of (an) existing plant(s). | The project activity is installation of new WTG's. PP doesn't have any WTG at the project site prior to the implementation of the project activity.<br>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:<br>(a) The project activity is implemented in existing reservoir, with no change in the volume of the reservoir; or<br>(b) The project activity is implemented in existing reservoir, where the volume of the reservoir(s) is increased and the power density | The project activity is a wind power plant. Hence, not applicable |

| | |
|---|---|
| as per definitions given in the project emissions section, is greater than 4 W/m2.<br>(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 | |
| 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 project activity is only 1.25 MW Wind based renewable electricity generation project. It does not include any non-renewable unit and cofiring system. |
| 5. Combined heat and power (co-generation) systems are not eligible under this category | The project activity does not involve combined heat and power generation system as it is only a wind power project. |
| 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 distinct from the existing units. | It is a Greenfield project and not the extension of an existing renewable energy facility. |
| 7. In the case of retrofit or replacement, to qualify as a small-scale project, the total output of the retrofitted or replacement power plant/unit shall not exceed the limit of 15 MW. | The project activity is not the retrofitting or replacement of an existing facility for renewable energy generation. Hence, this criterion in not applicable. |
| 8. In the case of landfill gas, waste gas, waste water 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 is not relevant to the project activity as the project involves only Wind power generating units. |
| 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. |

## 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)>>

As per applicable methodology AMS-ID Version 21 "The spatial extent of the project boundary included the project power plant and all power plants connected physically to the electricity systems that the project power plant is connected to."

Thus, the project boundary includes the Wind turbine Generator (WTGs) and the India grid system.

| Source | | GHG | Included? | Justification/Explanation |
|---|---|---|---|---|
| Baseline | Grid Connected electricity generation | **CO2** | **Yes** | **Main emission source** |
| | | CH4 | No | Minor emission source |
| | | N2O | No | Minor emission source |
| | | Other | No | No other GHG emissions were emitted from the project |
| Project | Greenfield Wind Power Project Activity | CO2 | No | No CO2 emissions are emitted from the project |
| | | CH4 | No | Project activity does not emit CH4 |
| | | N2O | No | Project activity does not emit N20 |
| | | Other | No | No other emissions are emitted from the project |

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

As per para 10 of the approved consolidated methodology AMS-I.D. Version 21, 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 use for captive purpose via grid interface through wheeling arrangement. 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.

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 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 conservative approach.

**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 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:
$BEy = EGPJ,y \times EFgrid,y$

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 a result of the implementation of the CDM project activity in year y (MWh)
$EFgrid,y$ = UCR recommended emission factor of 0.9 tCO2/MWh has been considered.
(Reference: General Project Eligibility Criteria and Guidance, UCR Standard, page 4)

**Project Emissions**

As per 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.

**Thus, PEy =0.**

**Leakage**
As per paragraph 22 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 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 CoU 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)

= 20934.21 MWh/year *0.9 tCO2/MWh

= 18,841 tCO2 (i.e., CoUs/year)

## C.6. Prior History>>

The project activity has not applied to any other GHG program for generation or issuance of carbon offsets or credits for the said crediting period.

## C.7. Monitoring period number and duration>>

First Monitoring Period: 11 year 0 months
01/01/2013to 31/12/2023 (inclusive of both dates)

## 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 >>

Not Applicable

## C.10. Monitoring plan>>

The project activity essentially involves generation of electricity from wind, the employed Wind Turbine Generator 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 (GETCO).

| | |
|---|---|
| Parameter: | EGPJ,y |
| Data unit: | Mwh |
| Description: | Net electricity supplied to the NEWNE grid facility by the project activity |
| Source of data: | GEDA Share certificate issued by GETCO (Gujarat Energy Transmission Corporation Limited) |
| Procedures | Continuous monitoring and monthly recordings take place. The net electricity supplied by the project activity is taken directly from the share certificate issued by GETCO on monthly basis and will be directly used to estimate the emission reduction. |
| Monitoring frequency: | Monthly |
| Purpose of data | To Estimate Baseline Emissions |

# ANNEXURE-1

1.25 MW Wind Power Project activity by Naroda Enviro Projects Ltd.

| Month Wise Aggregated Energy Delivered to Grid (in MWh) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | January | February | March | April | May | June | July | August | September | October | November | December |
| 2013 | 100.537 | 121.178 | 134.533 | 118.276 | 193.313 | 158.57 | 310.649 | 227.748 | 200.974 | 71.415 | 116.466 | 107.479 |
| 2014 | 180.434 | 113.198 | 123.343 | 83.719 | 181.033 | 392.208 | 340.799 | 188.916 | 104.098 | 67.599 | 67.679 | 140.369 |
| 2015 | 142.266 | 122.666 | 113.091 | 144.019 | 208.085 | 128.231 | 492.798 | 257.153 | 113.583 | 72.106 | 130.186 | 130.035 |
| 2016 | 67.172 | 117.881 | 114.833 | 118.83 | 255.116 | 313.331 | 389.141 | 276.368 | 148.094 | 75.107 | 63.429 | 90.733 |
| 2017 | 111.454 | 143.952 | 137.253 | 184.258 | 216.164 | 189.619 | 371.465 | 271.964 | 76.232 | 86.872 | 106.046 | 152.339 |
| 2018 | 81.554 | 74.487 | 109.402 | 91.995 | 180.141 | 281.592 | 370.542 | 293.861 | 149.927 | 65.524 | 73.215 | 157.392 |
| 2019 | 114.431 | 143.149 | 126.706 | 147.235 | 179.664 | 242.201 | 398.073 | 186.697 | 82.79 | 95.922 | 108.71 | 184.131 |
| 2020 | 145.832 | 135.268 | 148.164 | 93.231 | 186.509 | 126.674 | 216.506 | 326.833 | 59.364 | 56.613 | 130.649 | 127.732 |
| 2021 | 120.509 | 82.393 | 74.429 | 73.819 | 184.539 | 260.996 | 327.063 | 208.105 | 160.639 | 67.202 | 112.095 | 120.663 |
| 2022 | 93.205 | 78.572 | 98.223 | 90.711 | 240.245 | 196.172 | 353.261 | 216.914 | 88.423 | 58.975 | 47.761 | 107.736 |
| 2023 | 166.117 | 81.586 | 86.341 | 98.607 | 188.459 | 183.11 | 257.273 | 375.857 | 117.955 | 33.667 | 78.77 | 134.701 |

| Year-Wise Emission Reduction calculation for the Project activity | | | |
|---|---|---|---|
| Year | Total Electricity Delivered in Mwh | Recommended Emission Factor tCO2/Mwh | Total CoU Generated |
| 2013 | 1861.14 | 0.9 | 1675 |
| 2014 | 1983.40 | 0.9 | 1785 |
| 2015 | 2054.22 | 0.9 | 1849 |
| 2016 | 2030.04 | 0.9 | 1827 |
| 2017 | 2047.62 | 0.9 | 1843 |
| 2018 | 1929.63 | 0.9 | 1737 |
| 2019 | 2009.71 | 0.9 | 1809 |
| 2020 | 1753.38 | 0.9 | 1578 |
| 2021 | 1792.45 | 0.9 | 1613 |
| 2022 | 1670.20 | 0.9 | 1503 |
| 2023 | 1802.44 | 0.9 | 1622 |
| Total. | 20934.21 | 0.9 | 18,841 |
| **Total CoU to be issued for the first reporting period (Calender Year 2013 to Calender Year 2023)** | | | **18,841** |