PROJECT CONCEPT NOTE

CARBON OFFSET UNIT (CoU) PROJECT

Title: 6.85 MW Bundled Small Scale Wind Power Project in Gujarat

Version 1.0

Date 01/12/2021

First CoU Issuance Period: 7 years, 11 months

Date: 01/01/2014 to 30/11/2021

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

BASIC INFORMATION	
Title of the project activity	6.85 MW Bundled Small Scale Wind Power Project in Gujarat
Scale of the project activity	Small Scale
Completion date of the PCN	01/12/2021
Project participants	Creduce Technologies Private Limited (Representator) CERA Sanitaryware Limited (Developer)
Host Party	India
Applied methodologies and standardized baselines	Applied Baseline Methodology: AMS-I.D : "Grid connected renewable electricity generation", version 18.0 Standardized Methodology: Not Applicable.
Sectoral scopes	01 Energy industries (Renewable/Non-Renewable Sources)
Estimated amount of total GHG emission reductions	To be estimated during verification [An ex-ante estimate is 13,131 CoUs per year]

SECTION A. Description of project activity

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

The proposed project tile under UCR is "6.85 MW Bundled Small Scale Wind Power Project in Gujarat", which is a Wind Power project located in Jamnagar and Surindernagar districts, in the state of Gujarat (India). The project is an operational activity with continuous reduction of GHG, currently being applied under "Universe Carbon Registry" (UCR).

Purpose of the project activity:

The project activity is a renewable power generation activity with an aggregated installed capacity of 2 MW x 3 WTG + 0.850 MW x 1 WTG = Total 6.85 MW, manufactured and supplied by Gamesa Wind Turbines Pvt. Ltd. And Inox Wind Infrastructure Services Limited. This project has been developed by CERA Sanitaryware Limited ("CSL") who is a leader in manufacturing of sanitaryware. CERA with a view to align itself with sustainable development policies of India has undertaken this project to produce green power using wind as an energy source.

As per the ex-ante estimate, the project will generate approximately 14,050 MWh of electricity per annum, which will be wheeled to manufacturing facility of PP for captive consumption through NEWNE grid. The project activity has been helping in greenhouse gas (GHG) emission reduction by using renewable 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 plants. The project activity is a green field project aimed at utilising wind to produce power. The technological details have been provided in Section A.4.3.

The estimated annual average and the total CO_2e emission reduction by the project activity is expected to be 13,131 tCO_2e, whereas actual emission reduction achieved during the first CoU period shall be submitted as a part of first monitoring and verification.

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

Project's Contribution to Sustainable Development

This project is a greenfield activity where grid power is the baseline. Indian grid system has been predominantly dependent on power from fossil fuel powered plants. 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 guidelines for such projects which are contributing to GHG mitigations. The Ministry of Environment, Forests & Climate Change, has stipulated economic, social, environment and technological well-being as the four indicators of sustainable development. It has been envisaged that the project shall contribute to sustainable development using the following ways:

Social well-being: 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.

Economic well-being: 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.

Technological well-being: The project activity employs state of art technology i.e. 2 MW WTGs which has high power generation potential with optimised utilization of land. The successful operation of project activity would lead to promotion of this technology and would further push R&D efforts by technology providers to develop more efficient and better machinery in future. Hence, the project leads to technological well-being.

Environmental well-being: 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.

With regards to ESG credentials:

At present specific ESG credentials have not been evaluated, however, the project essentially contributes to various indicators which can be considered under ESG credentials. Some of the examples are as follows:

Under Environment:
Environmental criteria may include a company's energy use, waste, pollution, natural resource conservation, and treatment of animals etc. For the project proponent, energy use pattern is now based on renewable energy due to the project and it also contributes to GHG emission reduction and conservation of depleting energy sources associated with the project baseline. Also, the criteria can be further evaluated on the basis of any environmental risks which the company might face and how those risks are being managed by the company. Here, as the power generation will be based on wind power, the risk of environmental concerns associated with non-renewable power generation and risk related to increasing cost of power etc. are now mitigated. Hence, project contributes to ESG credentials.

Under Social:
Social criteria reflect on the company's business relationships, qualitative employment, working conditions with regard to its employees' health and safety, interests of other stakeholders' etc. With respect to this project, the Project Proponent has robust policies in place to ensure equitable employment, health & safety measures, local jobs creation etc. Also, the organizational CSR activities directly support local stakeholders to ensure social sustainability. Thus, the project contributes to ESG credentials.

Under Governance:

Governance criteria relates to overall operational practices and accounting procedure of the organization. With respect to this project, the Project Proponent practices a good governance practice with transparency, accountability and adherence to local and national rules & regulations etc. This can be further referred from the company's annual report. Also, the project activity is a wind power project owned and managed by the proponent for which all required NOCs and approvals are received. The electricity generated from the project can be accurately monitored, recorded and further verified under the existing management practice of the company. Thus, the project and the proponent ensure good credentials under ESG.

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

There was no harm identified form the project and hence no mitigations measures are applicable.

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

Nevertheless, stakeholders' consultations were conducted (on 23/12/2014, 26/01/2014 and 27/01/2014 respectively) at the project sites of Jamnagar & Surindernagar districts of Gujarat by the operation and maintenance team of the PP to understand, discuss, record all possible concerns related environment and socio-economic aspects of the project so that as per requirements mitigation measures can be taken. The Stakeholders were informed by sending personal invitation letters dated 08/12/2014, public notice was also pasted in gram panchayat office for the first meeting. The Stakeholder consultation's notice was also published in local newspaper dated 23/01/2014 in local language (Gujarati) for the second and third meetings. The feedback and inputs received from stakeholders confirm that no negative impact is foreseen by the stakeholders.

Additionally, there are social, environmental, economic and technological benefits which contribute to sustainable development. The key details have been discussed in the previous section.

A.3. Location of project activity >>

Country : India

1) Village: Motagunda; District: Jamnagar; State:Gujarat
2) Village: Motagunda and Jivapur; Districts: Jamnagar & Surindernagar; State: Gujarat

1) Latitude : 69^0 44' 48.7" E and 69^0 45' 13.3" E
   Longitude : 22^0 00' 09.1" N and 21^0 59' 49.8" N

2) Latitude : 22^0 15' 45.92" N and 22^0 02' 37.39" N
   Longitude : 71^0 08' 40.438" E and 69^0 44' 26.539" E

The representative location map is included below:

Figure: Location Map

(Courtesy: google map and images)

A.4. Technologies/measures >>

The proposed project activity is installation and operation of aggregated installed capacity of 6.85 MW manufactured and supplied by Gamesa Wind Turbines Pvt. Ltd. And Inox Wind Infrastructure Services Limited respectively in Surendranagr and Jamnagar district of Gujarat state of India.

The salient features of the technology are as given below:

Turbine model	G97
Rated power	2000 kW
Rotor diameter	97m
Hub height	90 m
Turbine Type	Horizontal axis wind turbine with variable rotor speed
Rated rotational speed	9.6-17.8 rpm
No of Blades	3
Blade Material	Fiber Glass Epoxy
Gear box type	3 stages (1 planetary & 2 parallel)
Generator type	Doubly-fed machine
Braking	Aerodynamic and emergency mechanical
Output Voltage	690V

2000kW:

Turbine model	WT 2000 DF
Rated power	2000 kW
Rotor diameter	93.3m
Hub height	80 m
Cut in wind speed	3 *m/s*
Rated wind speed	≤11.5 *m/s*
Cutout Wind speed	20 m/s
No of Blades	3
Blade Material	Epoxy glass fibre
Gear box type	Two planetary and one parallel soft gear
Generator type	Double fed induction generator
Braking	Full span independent blade pitching Disk brake
Output Voltage	690V
Frequency	50 Hz

G58 Turbine model (850 kW)

Turbine Type	Direct driven, horizontal axis wind turbine with variable rotor speed
Cut in wind speed	3.5 *m/s*
Rated wind speed	14 *m/s*
Cutout Wind speed	23 m/s
Extreme Wind Speed	58 *m/s*
Rated rotational speed	46 rpm
Operating range rot. speed	39.8/26.5 rpm
Orientation	Upwind
No of Blades	3
Blade Material	GRP
Gear box type	Planetary Gear
Braking	Hydraulic power pack
Output Voltage	400 V
Tower	50 m (Bolted)

The average lifetime of the WTGs under project activity is around 25 years as per the equipment supplier specifications. The plant load factor estimated as 20%, assessed by third party project site.

In the absence of the project activity the equivalent amount of electricity imported from NEWNE grid would have been generated from the NEWNE grid, which is predominantly based on fossil fuels[1], hence baseline scenario of the project activity is the grid-based electricity system, which is also the pre-project scenario.

A Supervisory Control & Data Acquisition System (SCADA) provides a graphical representation of data providing ease to understand the behaviour of WTG, long time data storage facility, access to daily generation report and power curve related information & helps to analyze the problem with graphical tools offline as well as online. The other specifications include a safety system with instrumentation for tracking individual functions of the wind electric generator.

[1] http://www.cea.nic.in/executive_summary.html
[2] https://cea.nic.in/cdm-co2-baseline-database/?lang=en

A.5. Parties and project participants >>

Party (Host)	Participants
India	**Creduce Technologies Private Limited (Representator)** Address: 2-O-13,14 Housing Board Colony, Banswara, Rajasthan, India-327001 Contact person: Shailendra Singh Rao Mobile: +91-9016850742, 9601378723 shailendra@creduce.tech **CERA Sanitaryware Limited (Developer)** Address: 9, GIDC Idustrial Area, Kadi, Mahesana, Gujarat – 382715

A.6. Baseline Emissions>>

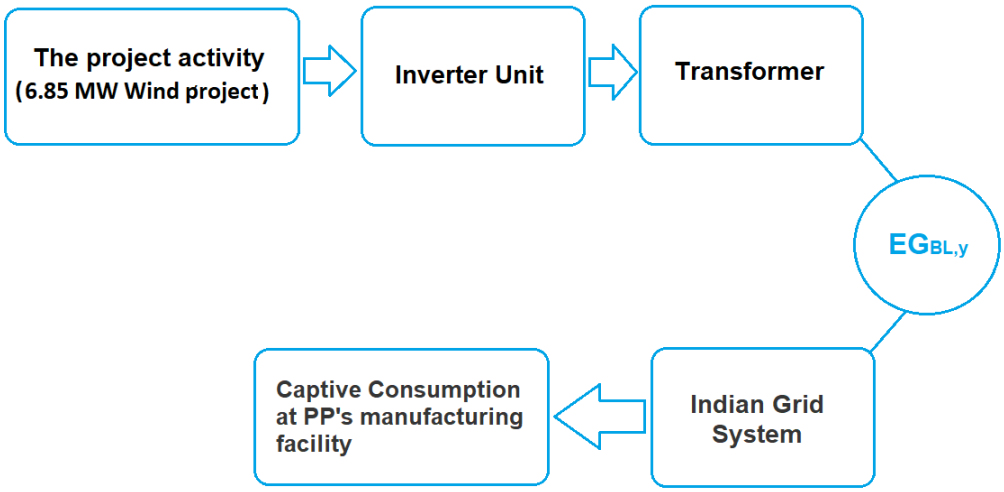
The baseline scenario identified at the PCN stage of the project activity is:

- Grid

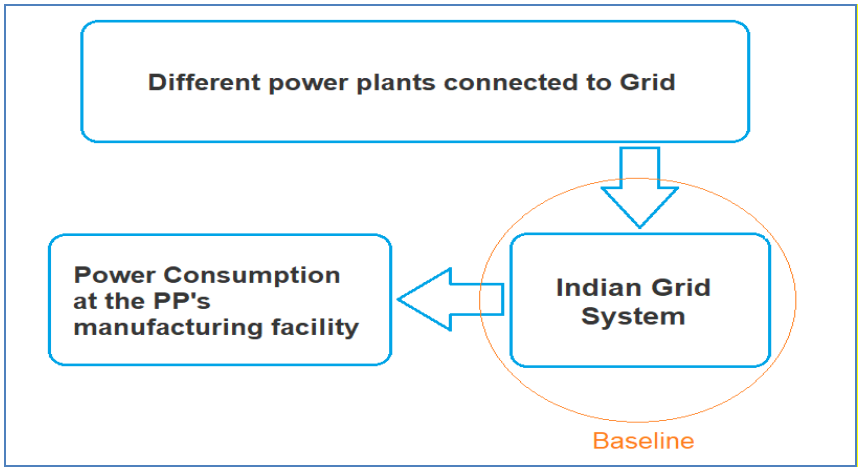
In the absence of the project activity, the equivalent amount of electricity would have been imported from the regional grid (which is connected to the unified Indian Grid system (NEWNE Grid)), which is carbon intensive due to predominantly sourced from fossil fuel-based power plants. Hence, baseline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

Schematic diagram showing the baseline scenario:

Project Scenario:



Baseline Scenario:



A.7. Debundling>>

This project activity 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:
I - Renewable Energy Projects

CATEGORY:
AMS. I.D. (Title: "Grid connected renewable electricity generation", version 18.0)

B.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 captive consumption of the power at the PP's facility. The project activity has installed capacity of 6.85 MW which will qualify for a small scale project activity under Type-I of the Small Scale methodology. The project status is corresponding to the methodology AMS-I.D., version 18 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 power project for captive consumption which falls under applicability criteria option 1 (b) i.e., "Supplying electricity to an identified consumer facility via national/regional grid through a contractual arrangement such as wheeling". Hence the project activity meets the given applicability criterion as well as satisfies the applicability illustration mentioned in Appendix of AMS-ID Table 1 – Scope of AMS-I.D. version 18.
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 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/m^2. (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 Generators (WTGs), 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 6.85 MW Wind power project, i.e. only component is renewable power project below 15MW, 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 w 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.	The proposed project is a greenfield 6.85 MW wind power project, i.e. only component is renewable power project below 15 MW, thus the criterion is not applicable to this project activity.
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 6.85 MW wind power project, i.e. only component is 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 6.85 MW 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.	Not 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 >>

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

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

As per applicable methodology AMS-I.D. Version 18, "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."

Thus, the project boundary includes the Wind Turbine Generators (WTGs) and the Indian grid system.

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 the project
Project	Greenfield Wind 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 >>

This section provides details of emission displacement rates/coefficients/factors established by the applicable methodology selected for the project.

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".

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.

The combined margin ($EF_{grid,CM,y}$) is the result of a weighted average of two emission factor pertaining to the electricity system: the operating margin (OM) (having weightage 75%) and build margin (BM) (having weightage 25%). Calculations for this combined margin must be based on data from an official source (where available) and made publically available.

The combined margin of the Indian grid used for the project activity is as follows:

Parameter	Value	Nomenclature	Source
$EF_{grid,CM,y}$	**0.93463** tCO_2/MWh	Combined margin CO_2 emission factor for the project electricity system in year y	Calculated as the weighted average of the operating margin (0.75) & build margin (0.25) values, sourced from Baseline CO_2 Emission Database, Version 16[2] published by Central Electricity Authority (CEA), Government of India.
$EF_{grid,OM,y}$	0.95677 tCO_2/MWh	Operating margin CO_2 emission factor for the project electricity system in year y	Calculated as the last 3 years generation-weighted average, sourced from Baseline CO2 Emission Database, version 16, published by Central Electricity Authority (CEA), Government of India.
$EF_{grid,BM,y}$	0.86821 tCO_2/MWh	Build margin CO_2 emission factor for the project electricity system in year y	Baseline CO_2 Emission Database, Version 16, published by Central Electricity Authority (CEA), Government of India.

[2] https://cea.nic.in/cdm-co2-baseline-database/?lang=en

Net GHG Emission Reductions and Removals

Thus, ER_y = $BE_y – PE_y – LE_y$

Where:

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

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

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

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

Baseline Emissions

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

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

BE_y	=	Baseline emissions in year y ($t\ CO_2$)
$EG_{PJ,y}$	=	Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh)
$EF_{grid,y}$	=	Combined margin CO_2 emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system" ($t\ CO_2/MWh$)

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)

= 14,050 MWh *0.93463

= 13,131 CoUs /year (i.e. 13,131 tCO_2eq/year)

B.6. Prior History>>

The project activity is a bundle of two different capacities viz.

(a) 4 MW which had been applied under Clean Development Mechanism (CDM) of UNFCCC to consider generation or issuance of carbon credits under the project title "4.00 MW Wind Power based Small Scale CDM Project in Jamnagar District, Gujarat. (Envarrior Consulting Services) 32". In this regard, a 'Prior consider of CDM' was submitted to UNFCCC and CDM DNA in India, which was published in CDM web interface on 30 Oct 2014 with the same project title. However, project (also the individual bundle members) has not been validated further under CDM due to low carbon pricing and higher investment required in the validation and registration process.

(b) 2.85 MW capacity which was applied under "Verified Carbon Standard (VCS)" with the project title "Bundled small scale wind energy VCS project activity by Envarrior Consulting Services-2". Published via VCS PD dated 09/05/2014. However, the project has not been taken up further under VCS due to low price and uncertainty.

Similarly, the project was not applied under any other GHG mechanism; hence project will not cause double accounting of carbon credits (i.e. COUs).

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

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

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

Not applicable.

B.9. Monitoring period number and duration>>

First Issuance Period: 7 years, 11 months – 01/01/2014 to 30/11/2021 (inclusive of both dates).

B.8. Monitoring plan>>

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

Data / Parameter	$EF_{grid,CM, y}$
Data unit	tCO_2 /MWh
Description	Combined margin emission factor for Indian grid connected power generation in year y calculated using the latest version of "Tool to calculate the emission factor for an electricity system version 16"
Source of data	CO_2 baseline database (Version 16) published by CEA
Value applied	0.93463
Measurement methods and procedures	This value is calculated using OM and BM values as per the methodological tool to calculate the emission factor for an electricity system and using data base of CEA.
Monitoring frequency	Ex-ante fixed parameter
Purpose of Data	For the calculation of Emission Factor of the grid

Data / Parameter	$EF_{grid,OM, y}$
Data unit	tCO_2 /MWh
Description	Simple operating margin emission factor for Indian grid
Source of data	CO_2 baseline database (Version 16) published by CEA
Value applied	0.95677
Measurement methods and procedures	This value is calculated by taking weighted average of Simple Operating Margin of recent three years for Indian grid as per the "Tool to calculate the emission factor for an electricity system"
Monitoring frequency	Ex-ante fixed parameter
Purpose of Data	For the calculation of Emission Factor of the grid

Data / Parameter	$EF_{grid, BM, y}$
Data unit	tCO_2 /MWh
Description	Simple build margin emission factor for Indian grid
Source of data	CO_2 baseline database (Version 16) published by CEA
Value applied	0.86821
Measurement methods and procedures	This value is calculated by taking weighted average of Simple Build Margin of recent three years for Indian grid as per the "Tool to calculate the emission factor for an electricity system"
Monitoring frequency	Ex-ante fixed parameter
Purpose of Data	For the calculation of Emission Factor of the grid

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

Data / Parameter	$EG_{PJ,facility, y}$
Data unit	MWh
Description	Net electricity supplied to the NEWNE grid facility by the project activity
Source of data	Share certificate issued by GETCO (Gujarat Energy Transmission Corporation Limited)
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). The net electricity generated by the project activity will be calculated from net electricity supplied to grid from the share certificate issued by state utility (currently GETCO) on monthly basis for respective WTGs. The amount of energy supplied by the WTGs are continuously monitored and recorded once a month. The same can be cross-checked from the State utility website which is publicly available.
Measurement Frequency:	Monthly
Value applied:	14,050
QA/QC procedures applied:	Continuous monitoring, hourly measurement monthly recording. Tri-vector (TVM)/ABT energy meters with accuracy class 0.2s
Purpose of data:	The Data/Parameter is required to calculate the baseline emission.
Any comment:	Data will be archived electronically for a period of 36 months beyond the end of crediting period. Since the renewable power generated from the project is used for captive consumption via wheeling, hence during the monitoring and verification the provision of the wheeling agreement may be referred.