



Universal Carbon Registry

**MONITORING REPORT
CARBON OFFSET UNIT (CoU) PROJECT**



**Title: 4 MW Wind Power Project by Gujarat Fluorochemicals Limited, India
Version 1.0**

Date of MR: 12th March 2024

UCR ID: 394

1st CoU Issuance Period: 08.10.2013 to 31.12.2022 (9 Years 02 month 23 days)

1st Monitoring Period: 08.10.2013 to 31.12.2022 (9 Years 02 month 23 days)

1st Crediting Period: 08.10.2013 to 31.12.2022 (9 Years 02 month 23 days)

8 DECENT WORK AND
ECONOMIC GROWTH



13 CLIMATE
ACTION



7 AFFORDABLE AND
CLEAN ENERGY





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

Monitoring Report	
Title of the project activity	4 MW Wind Power Project by Gujarat Fluorochemicals Ltd. (GFL)
UCR Project Registration Number	394
Version	1.0
Completion date of the MR	12/03/2024
Monitoring period number and duration of this monitoring period	Monitoring Period Number: 01 Duration of this monitoring Period: (first and last days included (08/10/2013 to 31/12/2022))
Project participants	Project Proponents: M/s. Gujarat Fluorochemicals Limited, (GFL) UCR Aggregator: Inox Green Energy Service Limited UCR ID: 724964927
Host Party	India
Applied methodologies and standardized baselines	Applied Baseline Methodology: AMS-I.D: “Grid connected renewable electricity 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: 429 CoUs (429 tCO ₂ eq)
	2014: 3309 CoUs (3309 tCO ₂ eq)
	2015: 4989 CoUs (4989 tCO ₂ eq)
	2016: 7063 CoUs (7063 tCO ₂ eq)
	2017: 7111 CoUs (7111 tCO ₂ eq)
	2018: 6064 CoUs (6064 tCO ₂ eq)
	2019: 6121 CoUs (6121 tCO ₂ eq)
	2020: 4195 CoUs (4195 tCO ₂ eq)
	2021: 2620 CoUs (2620 tCO ₂ eq)
	2022: 2900 CoUs (2900 tCO ₂ eq)
Total:	44,801 CoUs (44,801 tCO₂eq)

SECTION A. Description of project activity

A) Purpose and general description of project activity>>

The project activity titled 4 MW Wind Power Project by Gujarat Fluorochemicals Limited, Gujarat is renewable (wind) energy projects located at the following locations in Country: India:

Sr No	Name of Wind Farm	Installed Capacity (MW)	Village/s	District	State
01	Gujarat Fluorochemicals Limited	4	Veraval & Kidi	Rajkot & Amreli	Gujarat

The wind farm is owned by Gujarat Fluorochemicals Limited., (GFL- Project Proponent or PP), which is a subsidiary of Inox Wind Ltd (IWL) and Inox Green Energy Service Ltd (IGESL), which is a part of Inox GFL Group. The Group is an Indian conglomerate with a legacy of more than 90 years. The group is a forerunner in diversified business segments comprising Fluor polymers, Specialty Chemicals, Wind Energy, and Renewable in various geographies. The total installed capacity of the GFL Wind Project is 4 MW wind power project in Rajkot & Amreli district of Gujarat. The GFL Wind Projects consists of 2 WTGs of 2.0 MW each. The entire Engineering, Procurement and Construction (EPC) are provided by Inox Wind Ltd & Operations and Maintenance (O&M) services are provided by Inox Green Energy Service Ltd.

The generated electricity from the WTGs is grid connected wind power project located in Veraval village of Rajkot & Kidi village of Amreli District in the state of Gujarat (India). The purpose of this plant installation to supply electricity to regional Gujarat state grid and wheeled for captive consumption through wheeling into the grid by DGVCL (Dakshin Gujarat Vij Company Limited) and MGVCCL (Madhya Gujarat Vij Company Limited) and M/s GFL has the full ownership of the project activity. The wind power projects are operational activities with continuous reduction of GHGs, currently being applied for voluntary carbon offset units (CoUs) under “Universal Carbon Registry” (UCR).

In the absence of the project activity, electricity would have been delivered to the grid by the operation of fossil fuel-based grid-connected power plants and by the addition of new fossil fuel- based generation sources in the Grid. As is the nature of wind projects (renewable energy), no fossil fuel is involved for power generation in the project activity. The electricity produced by the project is directly contributing to climate change mitigation by reducing the anthropogenic emissions of greenhouse gases (GHGs, i.e., CO₂) into the atmosphere by displacing an equivalent amount of power at grid.

The project activity is hence the installation of new grid connected renewable power plants/units. The baseline scenario and scenario existing prior to the implementation of the project activity are both the same.

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

The Owner of the project is Gujarat Fluorochemicals Limited. The details along with commissioning period are as follows:

Sr. No	WTG No	COD	Village	Tehsil	District	State
1	PT-T-01	08/10/2013	Veraval	Jasdan	Rajkot	Gujarat
2	PTT-113	03/02/2016	Kidi	Babra	Amreli	Gujarat

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

Project Name: - Wind Power Project by Gujarat Fluorochemicals Limited.

Capacity & Units: - 4 MW & 2 No's WTG

All the machines are INOX make and have been developed using state of the art technology. In wind energy generation, kinetic energy of wind is converted into mechanical energy and subsequently into electrical energy. Wind has considerable amount of kinetic energy when blowing at high speeds. This kinetic energy when passes through the blades of the WEG is converted into mechanical energy and rotates the wind blades. When the wind blades rotate, the connected generator also rotates, thereby producing electricity. The technology is a clean technology since there are no GHG emissions associated with the electricity generation.

The important parts of wind mill are:

Main Tower This is a very tall structure with a ladder at the bottom. The ladder is used for operation and maintenance

Blades The WEGs are provided with three blades. The blades are self-supporting in nature made up of Fiber Rein forced Polyester. The blades are mounted on the hub.

Nacelle The Nacelle is the one which contains all the major parts of a WEG. The nacelle is made up of thick rugged steel and mounted on a heavy slewing ring. Under normal operating conditions, the nacelle would be facing the upstream wind direction.

Hub The Hub is an intermediate assembly between the wing and the main shaft of the wind turbine. Inside the hub, a system to actuate the aerodynamic brake is fitted. The hub is covered with nose cone.

Main Shaft The shaft is to connect the gear box and the hub. Solid high carbon steel bars or cylinders are used as main shaft. The shaft is supported by two bearings.

Gear Box, Bearing and Housing The gearbox is used to increase the speed ratio so that the rotor speed is increased to the rated generator speed. Oil cooling is employed to control the

heating of the gearbox. Gear boxes are mounted over dampers to minimize vibration. The main bearings are placed inside housing.

Brake Brake is employed in the WEGs to stop the wind turbine mainly for maintenance check. Brakes are also applied during over speed conditions of the wind turbine. The brakes are placed on the high-speed shaft.

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

In the absence of the project activity the equivalent amount of electricity would have otherwise been generated by the operation of fossil fuel-based grid-connected power plants and fed into unified India grid system, hence baseline scenario of the project activity is the grid-based electricity system, which is also the pre-project scenario as discussed in the previous section.

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

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

UCR Project ID: 394

Commissioning Date of the projects : 08/10/2013
: 03/02/2016

Start Date of Crediting Period : 08/10/2013

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	08/10/2013
Carbon credits claimed up-to	31/12/2022
Total ERs generated (tCO ₂ eq)	44,801 tCO ₂ eq
Leakage	0

B. Location of project activity>>

Country: India
State : Gujarat

D. 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

UCR Standardized Baseline Emission Factor Applied for the period 2013-2022

E. Crediting period of project activity>>

Start Date of Crediting Period: 08/10/2013

Length of the crediting period corresponding to this monitoring period: 9 Years 02 month 23 days i.e., 08/10/2013 to 31/12/2022 (Both the dates are inclusive).

F. Contact information of responsible persons/entities>>

Name : Saurabh Tyagi

Contact No : +918802088793

E-Mail : saurabh.tyagi@inoxwind.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>>

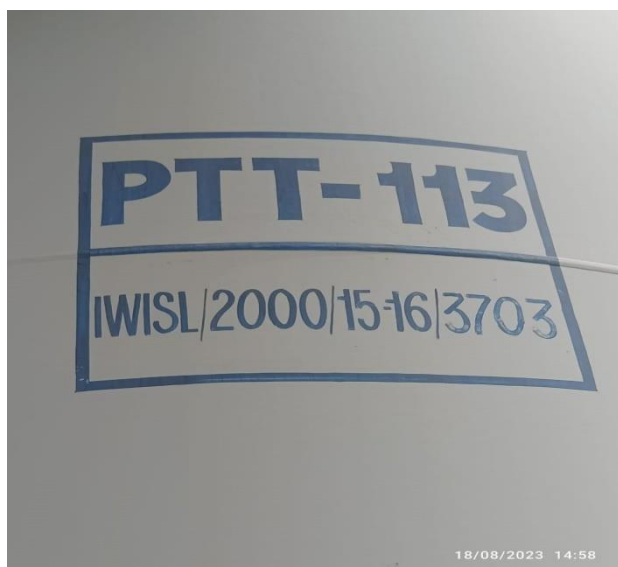
The project consists of 2 WTGs with capacity of 2 MW each installed. Wind Turbine which is installed at Veraval & Kidi village. The project generates clean energy by utilizing the kinetic energy of flowing wind.

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

Wind Turbines are manufactured and supplied by INOX with an aggregate installed capacity of 4 MW. The connectivity of all the WTGs is to a Central Monitoring Station (CMS) through high-speed WLAN modem or fiber 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.

Technical details of the machines installed are explained below:

Model		
1	Turbine Model	InoxDF2000-WT100
Operating Data		
2	Rated power	2000 kW
3	Cut in wind speed	3.0m/s
4	Rated wind speed	11m/s
5	Cut-out Wind speed	20.0m/s
6	Hub Height	92m
Rotor		
7	Rotor Diameter	100 m
9	Rotor Area	6795m ²
10	No of Rotor blade	3
Generator		
11	Type	Asynchronous
12	Power regulation	Pitch
Tower		
13	Type	tubular
14	Hub height	80m
15	Rated voltage	690V



PTT 113



PTT 01



Site Photos.

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 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 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 well-being: The project utilizes Wind energy for generating electricity which is Clean source of energy. The project activity will not generate any air pollution, wind pollution or solid waste to the environment which otherwise would have been generated through fossil fuels. Also, it will contribute to reduction GHG emissions. Thus, the project causes no negative impact on the surrounding environment contributing to environmental well-being.

Economic well-being: Being a renewable resource, using Wind energy to generate electricity contributes to conservation precious natural resources. The project contributes to the economic sustainability through promotion of decentralization of economic power, leading to diversification of the national energy supply, which is dominated by conventional fuel based generating units. Locally, 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 leads to the promotion of 2 MW Wind Turbine Generators into the region and will promote practice for small scale industries to reduce the dependence on carbon intensive grid supply to meet the captive requirement of electrical energy and also increasing energy availability and improving quality of power under the service area. Hence, the project leads to technological well-being.

B.3. Baseline Emissions>>

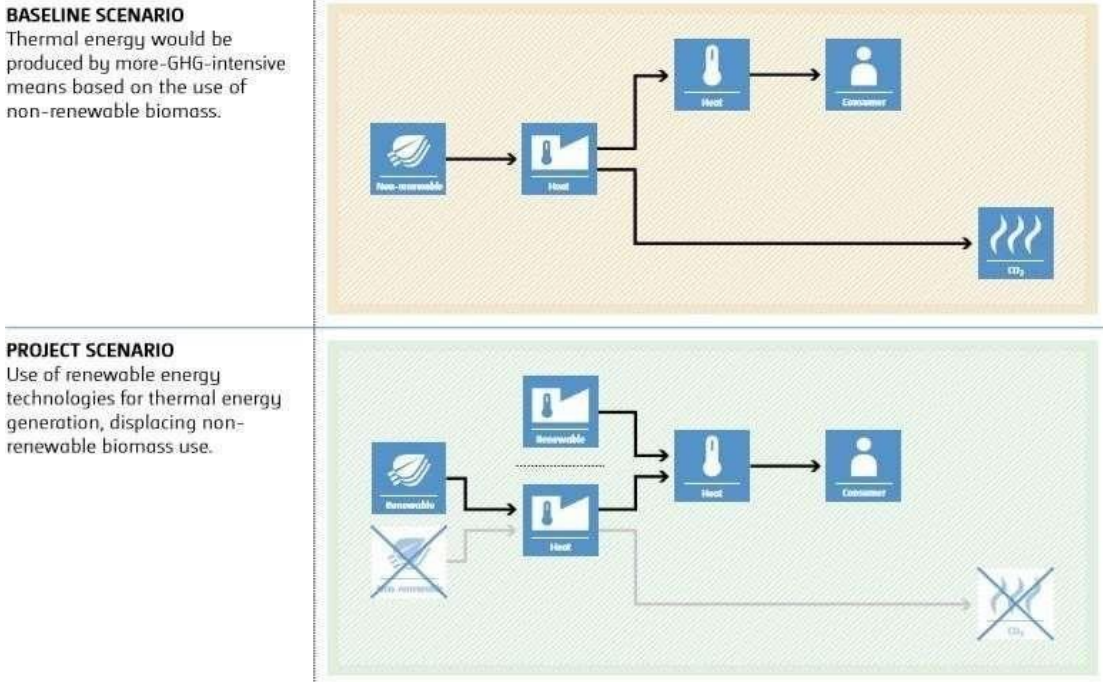
In the absence of the project activity, the equivalent amount of electricity would have been imported from the regional grid (which is connected to the Grid system), which is carbon intensive due to predominantly sourced from fossil fuel-based power plants.

Baseline Scenario:

Thus, this project activity was a voluntary investment which replaced equivalent amount of electricity from the Indian grid. The project proponent was not bound to incur this investment as It was not mandatory by national and sectoral policies. Thus, the continued operation of the project activity would continue to replace fossil fuel-based power plants and fight against the impacts of climate change.

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 2013- 2021 years as a fairly conservative estimate for Indian projects not previously verified under any GHG program. Also, for the vintage 2022, the

combined margin emission factor calculated from CEA database in India results into higher emission than the default value. Hence, the same UCR emission factor (0.9 tCO₂/MWh) has been considered to calculate the emission reduction under conservative approach.



B.4. Debundling>>

This project activity is not a de-bundled 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)

TYPEI- 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 new Wind power-based project and to use for captive purpose via grid interface by wheeling through state electricity board i.e. DGVCL and MGVCL under the Wheeling Agreement signed between the Project Proponent (PP) and the utility.

The project activity has installed 2 WTGs of capacity 2 MW each 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
<p>1. This methodology comprises renewable energy generation units, such as photovoltaic, Wind, tidal/wave, wind, geothermal and renewable biomass:</p> <ul style="list-style-type: none"> (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. 	<p>The project activity involves setting up of a renewable energy (Wind) generation plant that exports electricity to the fossil fuel dominated electricity grid (Indian Grid system). Thus, the project activity meets this applicability conditions.</p>
<p>2. This methodology is applicable to project activities that:</p> <ul style="list-style-type: none"> (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 are habilitation of (an) existing plant(s); or Involve are placement of(an) existing plant(s). 	<p>The Project activity involves the installation of new WTGs at a site where there was no renewable energy power plant operating prior to the implementation of the project activity. Thus, Project activity is a Greenfield plant and satisfies this applicability condition (a).</p>
<p>3. Hydro power plants with reservoirs that satisfy at least one of the following conditions are eligible to apply this methodology:</p> <ul style="list-style-type: none"> (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) The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the project emissions section, (e)is greater than 4W/m2 	<p>As the project activity is a Wind Turbine Generator, this criterion is not relevant for the project activity.</p>
<p>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 15MW.</p>	<p>The rated capacity of the project activity is 2X2 MW with no provision of Co-firing fossil fuel. Hence, meeting with this criterion.</p>

5. Combined heat and power (co-generation) systems are not eligible under this category	This is not relevant to the project activity as the project involves only Wind power generating units.
6. In the case of project activities that involve the capacity addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct from the existing units.	There is no other existing renewable energy power generation facility at the project site. Therefore, this criterion is not applicable.
7. In the case of retrofit 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 15MW.	The project activity is a new installation; it does not involve any retrofit measures nor any replacement and hence is not applicable for the project activity.
8. In the case of landfill gas, waste gas, 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 there covered 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.	Not biomass is involved, the project is only a wind power project and thus the criterion is not applicable to this project activity.

C.3 Applicability of double counting emission reductions>>

The project was not applied under any other GHG mechanism. Hence project will not cause double accounting of carbon credits (i.e., COUs).

C.3. Project boundary, sources and greenhouse gases(GHG)>>

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.” Thus, the project boundary includes the Wind Turbine Generators and the Indian grid system.

Source		Gas	Included?	Justification/Explanation
Baseline	Grid connected electricity generation	CO2	Yes	CO2 emissions from electricity generation in fossil fuel fired power plants
		CH4	No	Minor emission source
		N2O	No	Minor emission source
		Other	No	No other GHG emissions were emitted from the project
Project	Green-field 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 N2O
		Other	No	No other emissions are emitted from the project

C.4. Establishment and description of baseline scenario (UCR Protocol)>>

As per para 19 of 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 in to the grid”.

The project activity involves setting up of a new Wind Turbine Generator to harness the green power from Wind energy and use it for personal requirement (captive consumption). In the absence of the project activity, the equivalent amount of power would have been generated by the operation of grid- connected fossil fuel-based power plants and by the addition of new fossil fuel-based generation sources into the grid. 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. Also, for the vintage 2021-22, the combined margin emission factor calculated from CEA database in India results into same emission factors as that of the default value. Hence, the same emission factor has been considered to calculate the emission reduction.

Net GHG Emission Reductions and Removals

$$ER_y = BE_y - PE_y - LE_y$$

Where:

ER_y =Emission reductions in year y(tCO₂/y)

BE_y =Baseline Emissions in year y(tCO₂/y)

PE_y = Project emissions in year y (tCO₂/y)

LE_y = 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:

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

Where:

BE_y = Baseline emissions in year y(tCO₂)

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

$EF_{grid,y}$ = UCR recommended emission factor of 0.9 tCO₂/MWh has been considered, this is conservative as compared to the combined margin grid emission factor which can be derived from Data base of Central Electricity Authority (CEA), India. (Reference: General Project Eligibility Criteria and Guidance, UCR Standard, Page 4)

Hence, $BE_y = 49779 * 0.9 = 44,801 \text{ tCO}_2\text{eq}$

Project Emissions

As per paragraph 39 of AMS-I.D. (version 18, dated 28/11/2014), for most renewable energy project activities emission is zero.

Hence, $PE_y = 0$

Leakage Emissions

As per paragraph 42 of AMS-I.D.version-18, all projects other than Biomass projects have zero leakage.

Hence, $LE_y = 0$

Total Emission reduction by the project for the current monitoring period is calculated as below:

Hence, $ER_y = 44801 - 0 - 0 = 44,801 \text{ CoUs}$

C.6. Prior History>>

The project was not applied under any other GHG mechanism. Hence project will not cause double accounting of carbon credits (i.e., COUs).

C.7. Monitoring period number and duration>>

08/10/2013 to 31/12/2022 (inclusive of both dates)

First Monitoring Period: 9 Years 02 month 23 days

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

No changed in crediting period. The crediting period start date is 08/10/2013.

C.9. 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

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, and 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.

PPs are the project implementers and monitor the electricity delivered to the electricity grid by the project activity. The data is already archived electronically and is stored since commissioning. To ensure that the data is reliable and transparent, the PPs have established Quality Assurance and Quality Control (QA&QC) measures to effectively control and manage data reading, recording, auditing as well as archiving data and all relevant documents. The data is monitored on a daily basis and is submitted to PPs on a daily basis. PPs have implemented QA&QC measures to calibrate and ensure the accuracy of metering and safety aspects of the project operation. The metering devices are calibrated and inspected properly and periodically, according to state electricity board's specifications and requirements to ensure accuracy in the readings.

The recording of the electricity fed to the state utility grid is carried out jointly at the incoming feeder of the state power utility. The joint measurement is carried out once in a month in presence of both parties (the developer's representative and officials of the state power utility). Both parties sign the recorded reading.

Data/Parameter	EF, CO ₂ , GRID, y
Data unit	0.9 tCO ₂ /MWh
Description	A "grid emission factor" refers to a CO ₂ emission factor (tCO ₂ /MWh) which 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 2013-2020 years as a fairly conservative estimate for Indian projects not previously verified under any GHG program. Also, for the vintage 2021-22, the combined margin emission factor calculated from CEA database in India results into same emission factors as that of the default value. Hence, the same emission factor has been considered to calculate the emission reduction
of data Value(s) applied	UCR Standard Protocol As per Standard
Measurement methods and procedures	Fixed
Monitoring frequency	NA
Purpose of data	To estimate baseline emissions

Data/Parameter:	<i>ESy</i>																						
Data unit:	MWh Quantity of net electricity supplied by the Project Activity to the grid in year y.																						
Description:	<table border="1"> <thead> <tr> <th>Year</th> <th>MWh Supplied to Grid</th> </tr> </thead> <tbody> <tr> <td>2013</td> <td>477.039</td> </tr> <tr> <td>2014</td> <td>3676.733</td> </tr> <tr> <td>2015</td> <td>5544.278</td> </tr> <tr> <td>2016</td> <td>7848.78</td> </tr> <tr> <td>2017</td> <td>7901.922</td> </tr> <tr> <td>2018</td> <td>6737.807</td> </tr> <tr> <td>2019</td> <td>6801.471</td> </tr> <tr> <td>2020</td> <td>4661.758</td> </tr> <tr> <td>2021</td> <td>2911.525</td> </tr> <tr> <td>2022</td> <td>3223.236</td> </tr> </tbody> </table>	Year	MWh Supplied to Grid	2013	477.039	2014	3676.733	2015	5544.278	2016	7848.78	2017	7901.922	2018	6737.807	2019	6801.471	2020	4661.758	2021	2911.525	2022	3223.236
Year	MWh Supplied to Grid																						
2013	477.039																						
2014	3676.733																						
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2018	6737.807																						
2019	6801.471																						
2020	4661.758																						
2021	2911.525																						
2022	3223.236																						
Source of the Data:	JMR. Statement of net export to power to the grid issued Monthly by State Electricity Board or any other competent authority as applicable																						

Measurement Procedure (if any):	Total MW supplied to the grid during this MR= 49,779 mw. (Round down)
Monitoring frequency:	Monitoring frequency: Continuous Measurement frequency: Hourly Recording frequency: Monthly
QA/QC procedures:	<p>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 shall be jointly inspected, and sealed by authorized Representatives of the company and the state utility.</p> <p>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.</p> <p>Accuracy class of energy meter: As per Wheeling Agreement or relevant National standards amended/modified from time to time.</p> <p>Calibration Frequency: As per the Central Electricity Authority the testing and calibration frequency should be minimum once in five years. However, the calibration will be done following the relevant applicable National Guidelines updated from time to time during the operation of the project activity.</p> <p>Entity responsible: Aggregator</p> <p>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 shall be jointly inspected, and sealed by authorized Representatives of the company and the state utility.</p> <p>The electricity meter/s record both export and import of electricity from the Wind Farm plant and the readings with regard to net electricity generated will be used for calculation of emission reductions. The net electricity supplied to the grid will be cross</p>

	<p>checked with the monthly settlement invoices. The meter should be checked for accuracy and the meters will be calibrated as per the procedures of State Electricity Board as per the national or international standards. Measurement results shall be cross checked with records for sold electricity (i.e. Invoice). As per the monthly accounting procedure reflected in the monthly statement (e.g., JMR and Settlement Invoices etc.) However, if the monthly statement does not directly provide “net electricity” units, then quantity of net electricity supplied to the grid shall be calculated using the parameters reflected in the monthly document, such as Export units and Import units. Thus, the difference between the measured quantities of the grid export and the import will be considered as net export: $EGPJ,y = EG \text{ Export} - EG \text{ Import}$ (Calculation has been referred in the ER sheet)</p>
Purpose of the Data:	-Calculation of baseline emissions



Sub-station



CALIBRATION CERTIFICATE		F/CR/E/19 Issue No. 01 Page 1 of 8
Name and address of customer:	Certificate No.	AEPL/21/M/N-0782
INOX Green Energy Service Limited	Date of issue	22.11.2021
220/33 kV Sukhapur INOX Substation, Village: Sukhapur, Ta: Babra, Dist: Amreli	Date of calibration	22.11.2021
	Date of receipt	22.11.2021
ULR: CC29832100000782F		

CALIBRATION CERTIFICATE		F/CR/E/19 Issue No. 01 Page 1 of 8
Name and address of customer:	Certificate No.	AEPL/21/M/N-0783
INOX Green Energy Service Limited	Date of issue	22.11.2021
220/33 kV Sukhapur INOX Substation, Village: Sukhapur, Ta: Babra, Dist: Amreli	Date of calibration	22.11.2021
	Date of receipt	22.11.2021
ULR: CC29832100000783F		

Details of unit under calibration	
Location of performance of Calibration : 220 kV Sukhapur-Amreli Line-1	
Name of Instrument : Three Phase ABT Meter	
Sr. No.	: GJ-3057-A
Make / Model No	: EDM/EDMI Mk6E
Ampere	: 1A
Frequency	: 50Hz
Accuracy	: 0.2S
Temp	: 26.3 °C to 27.6 °C
Type	: 3P4W
Mode of Calibration	: Direct
PT Ratio	: 220 KV / √3/110V/ √3
CT Ratio	: 1A
Unit	: kWh/kVAh
Humidity	: 50-60 % Rh
Visual inspection	: OK
Initial Error	: NA
Calibration By:	Approved By:
Calibration Engineer	Quality Manager

Details of unit under calibration	
Location of performance of Calibration : 220 kV Sukhapur-Amreli Line-2	
Name of Instrument : Three Phase ABT Meter	
Sr. No.	: GJ-3058-A
Make / Model No	: EDM/EDMI Mk6E
Ampere	: 1A
Frequency	: 50Hz
Accuracy	: 0.2S
Temp	: 26.3 °C to 27.6 °C
Type	: 3P4W
Mode of Calibration	: Direct
PT Ratio	: 220 KV / √3/110V/ √3
CT Ratio	: 1A
Unit	: kWh/kVAh
Humidity	: 50-60 % Rh
Visual inspection	: OK
Initial Error	: NA
Calibration By:	Approved By:
Calibration Engineer	Quality Manager

AKRON ENERGY PRIVATE LIMITED



AKRON ENERGY PRIVATE LIMITED
A-504, "PRIVILON", Behind ISKCON Temple,
S G Highway, Ahmedabad, Gujarat-380054.
+91 90990 47599, naresh.soni@akronenergy.in
akronenergy.in



verify.akronenergy.in

Calibration certificates.



PTT01 Meter details.

GFL Main and Check Meter Details

Project	Feeder	Main Meter	Check Meter
GFL 4 MW Wind Power Project	Line-1	GJU61771	GJ-1966-A
	Line-2	GJU61770	GJ-3624-A
	Line-3	RJB81532	GJ-2532-A

ANNEXURE I (Month Wise Energy Delivered to Grid (kWh))

4 MW GFL												
Month—Wise Energy Delivered to Grid (kWh)												
Year	Jan	Feb	March	April	May	June	July	August	Sept	Oct	Nov.	Dec
2013										57546	211994	207499
2014	327924	268668	251190	187886	383509	665905	531069	350461	164155	79283	112495	354188
2015	314784	2095669	130024	178912	381570	418308	776288	365856	176999	147795	230961	327112
2016	156547	506378	521091	413783	1128564	1233840	1076379	1063837	724824	272620	305683	445234
2017	310100	649912	616498	854024	1042313	819481	1201856	835672	237172	401744	306121	627029
2018	252055	311080	485509	464545	692619	1190446	1018280	1011831	417366	196301	216741	481034
2019	349276	521729	451536	603136	757531	746557	969320	800108	341553	381457	293471	585797
2020	247837	441926	429893	518516	603818	448992	574865	443759	86892	121166	250572	493522
2021	240114	177292	158729	160126	327435	211993	453030	236647	112841	130424	299214	403680
2022	202434	248183	324241	479222	732524	582798	0	108648	59351	0	117058	368777
Total Generation from November 2013 to December 2022 in kWh												



GEDA

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GUJARAT ENERGY DEVELOPMENT AGENCY
A Government of Gujarat Organisation

Ref: GEDA/PWF/INOX-IWL/15-16/ 9657

Date: March 1, 2016

CERTIFICATE OF COMMISSIONING

This is to certify that **M/s Inox Wind Ltd** having registered office at Plot No.1, Khasra No.264 to 267, Industrial Area, Village-Basal, Dist.Una-174303 (H.P) have commissioned **02 MW** capacity windfarm consisting of **01 (One)** number of new Wind Turbine Generator (WTG) as per the WTG ID no and date of commissioning given below:

Make of each Wind Turbine Generator (WTG) : INOX
Capacity of each Wind Turbine Generator : 2000 kW
No of Wind Turbine Generator(s) : 01 (One)
Total capacity of the Windfarm : 02 MW

Sr. No	Details of site of installation			Revenue Survey No	Location No	Date of Commissioning	WTG ID num
	Name of Village	Taluka	District				
01	Kidi	Babra	Amreli	80/pl	PTT-113	03/02/2016	IWISL/2000/15-16/3703

This windfarm is connected by 33 kV grid line to 220/33 kV IWISL site sub-station at Sukhpur. The IWISL site Sub Station is connected by 220 kV grid line to 400/220 kV GETCO Amreli Sub Station.

Electricity generation report for the purpose of commissioning of windfarm:

Sr. no.	WTG ID No.	Date	Time (Hrs)		Meter (kWh)		
			From	To	Initial	Final	Difference
1	IWISL/2000/2015-16/3703	03/02/2016	13:20	14:20	7	190	183

For Gujarat Energy Development Agency

(S. B. Patil)
Dy. Director



GEDA

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GUJARAT ENERGY DEVELOPMENT AGENCY
A Government of Gujarat Organisation

Ref: GEDA/INOX/INOX IWL/13-14/10/ 4146

Date: October 23, 2013

CERTIFICATE OF COMMISSIONING

This is to certify that M/s Inox Wind Ltd. having registered office at Plot No: 1, Khasra No - 264 To 266 Industrial Area, Village: Basal Dist: Una - 174303(ILP), India. have commissioned 2.00 MW capacity windfarm consisting of 1 (One) number of new Wind Turbine Generator (WTG) as per the WTG ID no and date of commissioning given below and location as shown in micro siting drawing enclosed herewith.

Make of each Wind Turbine Generator (WTG) : INOX
Capacity of each Wind Turbine Generator : 2000 kW
No of Wind Turbine Generator(s) : 1 (One)
Total capacity of the Windfarm : 2.00 MW

Sr. No.	Details of site of installation			Revenue Survey No	Date of Commissioning	WTG ID number(s)
	Name of Village	Taluka	District			
1	Veraval (Bhadla)	Jasdan	Rajkot	8/p	08.10.2013	IWISL/2000/13-14/3306

This windfarm is connected by 66 kV grid line to 66 kV IWISL site sub station at Devpara. The IWISL site Sub Station is connected to 137/66 kV GETCO Jasdan Sub Station.

Electricity generation report for the purpose of commissioning of windfarm:

Sr. no.	WTG ID No.	Date	Time (Hrs)		Meter (kWh)		
			From	To	Initial	Final	Difference
1	IWISL/2000/13-14/3306	08.10.2013	18:30	18:45	1210	1285	075

For Gujarat Energy Development Agency

(S. B. Patil)
Dy. Director (I/C)