



Verified Carbon Standard

BUNDLED RENEWABLE ENERGY PROJECT IN GUJARAT AND KARNATAKA, INDIA



Partners to achieve Net Zero Solutions

Document Prepared by PA Research & Consultants Pvt. Ltd.

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1 PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

The project activity is a bundled project activity involving installation and operation of 2 Wind Turbine Generators (WTGs) having individual capacities 1x2000 kW (G114) and 1x850 kW (G58) manufactured and supplied by Siemens Gamesa Renewable Power Pvt. Ltd. and 3.5 MW solar PV modules manufactured and supplied by Diwakar Soltek Pvt. Ltd. with aggregated capacity of 6.35 MW in Indian states of Karnataka and Gujarat. The project activity is promoted by Sai Pet Preforms with a view to align itself with sustainable development policies of India has undertaken this project to produce green power using wind and solar as an energy source.

The 2 MW wind power project site in Karnataka is located in Bableshwar Wind Park at Malaghan village at Basavana Bagewadi Taluka at Vijayapura district and 0.85 MW wind power project in Gujarat is located at Village Juna kataria, Khodasar of Bhachhau Taluka falling under Kutch district. On the other hand, the 3.5 MW solar PV power generation project site is located at Upparhalli village Hospet taluka within Bellari district of Karnataka. The generated electricity from this project activity is exported to the Indian grid. Electricity generated from 2 MW wind power plant in Karnataka is supplied to the local electricity distribution licensee Hubli Electricity Supply Company Limited (HESCOM), electricity generated from 0.85 MW wind power plant in Gujarat is supplied to Gujarat Urja Vikas Nigam Limited (GUVNL) while the 3.5 MW solar PV power plant supplies electricity to Gulbarga Electricity Supply Company Limited (GESCOM).

The project activity helps in Greenhouse gas (GHG) emission reduction by using renewable resources (wind/solar 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 Greenfield project aimed at utilizing wind and solar energy sources to generate electricity. In the pre-project scenario, the equivalent amount of electricity would have been generated by grid mix power plants connected Indian grid, which is dominated by fossil fuel based thermal power plant. The project activity, thus reduces the anthropogenic emissions of Green House Gases (GHGs) in to the atmosphere associated with the equivalent amount of electricity generation from the fossil fuel-based grid connected power plant. Since the project activity is generating electricity through wind and solar energy, a clean renewable energy source it is not be causing any negative impact on the environment and thereby contributes to climate change mitigation efforts as well as sustainable development.

Type	Location	Installed Capacity (MW)	Number of WTG	Offer Letter	Commissioning Date
Wind	Karnataka	2	1	17/01/2017	08/03/2018
Wind	Gujarat	0.85	1	12/01/2017	01/04/2018
Solar	Karnataka	3.5	-	--	15/07/2019

The wind and solar project in the bundle are operational since commissioning with planned outage and maintenance. The total CO₂e emission reduction by the project activity during current monitoring period i.e., from 08/03/2018 to 31/08/2022 is 41,663 tCO₂e.

Audit Type	Period	Program	VVB Name	Number of years
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Validation	-	<u>VCS</u>	<u>KBS Certification Services</u>	-
Verification	08-March-2018 to 31-August-2022	<u>VCS</u>	<u>4K Earth Science Pvt Ltd</u>	4.487 years (1638 days)
Total	<u>1</u>	<u>1</u>	<u>2</u>	4.487 years

1.2 Sectoral Scope and Project Type

Sectoral scope- 01, Energy Industries (Renewable -/non-renewable sources)

Project Type- Renewable Energy Project

Grouped project – No.

1.3 Project Proponent

Organization name	Sai Pet Preforms
Contact person	Mr. Santoshnag Pathikonda
Title	Managing Partner
Address	Beside Bala Talkies, 10th Ward, Hampi Road Hospet – 583201 Karnataka, India
Telephone	+91 - 8394 – 228 344 / +91 – 9538123473
Email	info@saipetpreforms.com

Organization name	PA Research & Consultants Pvt. Ltd.
Contact person	Mr. Phool Chand
Title	Director
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1.4 Other Entities Involved in the Project

No other entity involved.

1.5 Project Start Date

The start date of the project activity is 08-March-2018, which is the earliest date of commissioning of the WTG.

1.6 Project Crediting Period

Crediting Period: 08/03/2018 to 07/03/2028 (including both days).

VCS Project Crediting Period: Ten years, this may be renewed at most twice.

1.7 Project Location

The Project sites are connected by roads to the nearest town. The physical address and geographic co-ordinate of project site is provided below.

Type	Capacity	Location	Geo-ordinates
Wind Power Project	2.0 MW	Malaghan village at Basavana Bagewadi Taluka of Vijayapura District, Karnataka	16.56° N, 75.97° E
Wind Power Project	0.85 MW	Juna Katiar village at Bhachhau taluka of Kutch district, Gujarat	23.29° N, 70.33° E
Solar PV Power Project	3.5 MW	Upparhalli village at Hospet taluka of Ballari district, Karnataka	15.26° N, 76.39° E

1.8 Title and Reference of Methodology

Following approved baseline & monitoring methodology is applied;

Title: Type-I, Renewable Energy Project

Methodology: AMS I.D. Grid connected Renewable Electricity Generation

Version: 18, valid from 28/11/2014. Scope: 01, EB 81 Annex- 14

Reference:

<http://cdm.unfccc.int/methodologies/DB/W3TINZ7KKWCK7L8WTFQOQFQOH4SBK>

The tools referenced in this methodology used for the proposed project includes:

- ☐ Tool to calculate the emission factor for an electricity system Version 07.0.0, Annex 4 of EB 100

<https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf>

- ☐ “Tool to calculate project or leakage CO₂ emission from fossil fuel consumption “Version 03, annex 4, EB96.

<https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-03-v3.pdf>

- ☐ Tool to demonstrate Additionality of Small-Scale Project Activities (Version 12.0);

<https://cdm.unfccc.int/UserManagement/FileStorage/7KGLDHZPAOXOURFE8241CYS9MNB60W>

- ☐ Investment Analysis Version – 09, Annex-11 of EB 101

<https://cdm.unfccc.int/UserManagement/FileStorage/N2GXMAZC8BJ0ESR3Y1QUO4THV9L57D>

Guidelines:

General guidelines for SSC CDM methodologies, Version 23, EB 104, Annex 5.

<https://cdm.unfccc.int/UserManagement/FileStorage/7LAMCZHWDK65UVRS3Y89TPQNIEF12G>

1.9 Participation under other GHG Programs

The project activity has not been registered, or currently seeking registration under any other GHG programs. The project has not participated under any other GHG program.

1.10 Other Forms of Credit and Supply Chain (Scope 3) Emissions

This project activity is voluntary initiative and it is not to meet any local laws or regulatory compliances. An undertaking was submitted stating that PP shall not claim for GHG emission reduction credits for the given crediting period under any other emission-trading program or GHG binding limits.

PP declares that emission reductions generated from the project activity will not be double counted (i.e., issuance of other form of environmental credit like under CDM) for the particular crediting period, which is being claimed under VCS mechanism. PP has submitted an undertaking to the VVB that they shall not claim for GHG emission reduction credits for the given period under any other emission-trading program. The project activity generates and supplies electricity produced from renewable source of energy (i.e. wind & solar), thus supply chain (scope 3) emissions are not applicable for this project activity. The project is not eligible to create another form of GHG related environmental credit. The credits will be generated under VCS only and will be issued from Verra itself.

1.11 Sustainable Development Contributions

Government of India has stipulated following indicators for sustainable development in the interim approval guidelines for CDM projects.

1. Social well-being
2. Economic well-being
3. Environmental well-being
4. Technological well-being

1. Social well-being:

The project helps in generating employment opportunity during the construction and operational phases. The project activity leads to development in infrastructure in the region like development of roads power generation.

2. Economic well-being:

The project is a clean technology investment in the region, which would not have been taken place in the absence of the VCS benefits. The project activity helps to reduce the demand supply gap in the region and eventually impact would be seen in national level. As the project activity generates employment opportunity in the local area. Hence, the project contributes to the economic sustainability, which is promotion of economic power.

3. Environmental well-being:

The project utilizes wind and solar energy for generating electricity which otherwise would have been generated through alternate fuels-based power plants; thus, the project activity contributes in reduction in specific emissions (emissions of pollutant/unit of energy generated) including GHG emission. Being renewable resources, using wind or solar energy to generate electricity contributes to resource conservation of natural resource besides avoiding emission of harmful effluents. Thus, the project causes no negative impact on the surrounding environment contributing to environmental well-being.

4. Technological well-being:

The project makes use of efficient environmentally safe technology for power generation. The project activity employs state of art technology i.e., 2.0 MW and 0.85 MW WTGs which has high power generation potential with optimized utilization of land and solar PV modules of combined capacity 3.5 MW with high power conversion efficiency. Hence, the project leads to technological well-being. The project activity promotes solar based power generation and encourages many other entrepreneurs to participate in similar projects. The generation of electricity from the project also leads to strengthening of the grid, increasing the energy availability thereby meeting energy demand to a certain extent leading to technological well-being.

Table 1: Sustainable Development Contributions

Row number	SDG Target	SDG Indicator	Net Impact on SDG Indicator	Current Project Contributions	Contributions Over Project Lifetime
<i>Sequential row number</i>	<i>SDG Target number</i>	<i>Number and text of SDG indicator or, if no official SDG indicator is applicable, user-defined indicator</i>	<i>Indicate the project's contribution to the SDG Indicator (implemented activities to increase or decrease)</i>	<i>Brief description of the quantifiable impact of the project's activities related to the SDG indicator, during the monitoring period.</i>	<i>Brief description of the cumulative quantifiable impact of the project's activities related to the SDG indicator, over the project lifetime.</i>
1)	7.2	7.2.1 Renewable energy share in the total final energy consumption	Implemented activities to increase	The project activity has generated 44,475.68 MWh electricity	During the lifetime of the project, the project activity has cumulatively generated 44,475.68 MWh electricity.
2)	8.5	Productive employment and decent work	Implemented activities to increase	The project activity has provided employment to 26 individuals at all three-project site.	During the lifetime of project, the project activity has provided 26 employment opportunities.
3)	13.0	Tons of greenhouse gas emissions avoided or removed	Implemented activities to increase	The project, in the current reporting period has resulted in emission reduction of 41,663 tCO ₂ e into the atmosphere	During the project lifetime, the project activity has achieved 41,663 tCO ₂ e of emission reduction

2 SAFEGUARDS

2.1 No Net Harm

The facility does not produce any pollution in process of power generation as it utilizes renewable energy sources in all its project sites – wind energy and solar energy. Hence there is positive impact on the environment due to this small-scale project activity of reducing the pollution caused by fossil fuel used in power plants in grid. There are no such potential negative environmental and socio-economic threat related to the project activity. Thus, no mitigation methods are to be applied.

The project activity has obtained all the required clearance from nodal agencies.

2.2 Local Stakeholder Consultation

There were no disputes or concerns raised by any stakeholders during the current monitoring period. There is a maintained grievance mechanism for the project activity. A grievance register has been maintained at the project site. The location was regularly checked for any stakeholder comments. No comments were received from stakeholders regarding the project during the current monitoring period. As no serious breakdown or other changes happened after the commissioning, requirement of another stakeholder meeting was not necessary.

2.3 AFOLU-Specific Safeguards

Not Applicable

3 IMPLEMENTATION STATUS

3.1 Implementation Status of the Project Activity

The start date of the project activity is 08/03/2018 which is the commissioning date of the first WTG among the bundle. The commissioning dates of the projects in the bundle are as follows:

Type	Installed Capacity (MW)	Commissioning Date
Wind	2	08/03/2018
Wind	0.85	01/04/2018
Solar	3.5	15/07/2019

The project activity was operational with planned operation and maintenance during current monitoring period i.e., from 08/03/2018 to 31/08/2022. There were no incidents occurred during current monitoring period, which may impact applicability of monitoring methodology and GHG emission reduction calculation. The project activity is operated as per detailed provided in registered VCS PD.

There was no generation for 2MW WTG from November 2019 to May 2020 as the machine broke down on 04/10/2019 and was restored on 02/06/2020. The other 2 units didn't face any major breakdown and were operational with regular maintenance since commissioning.

The energy meters installed at 2MW WTG site and 3.5MW Solar PV site being replaced due to compatibility and/or error in meter, the details on meter replacement along with new meter is provided in Appendix-I-Calibration Details.

3.2 Deviations

3.2.1 Methodology Deviations

No deviation in the methodology has been applied to the project activity during the monitoring period.

3.2.2 Project Description Deviations

It was reported in the VCS PD, for each of the 3 sub projects of the bundle. the electricity generation will be monitored through main meter at 2 outgoing feeders. However, the electricity generated is monitored using main meter from a single feeder only at each of the 3 sites. This deviation does not impact the applicability of the methodology, additionality or the appropriateness of the baseline scenario as they remain the same. The deviation requested above has no correlation with information provided in Appendix-I.

3.3 Grouped Projects

This is not a grouped project activity.

4 DATA AND PARAMETERS

4.1 Data and Parameters Available at Validation

Data / Parameter	EF _{grid,OM, y}
Data unit	tCO ₂ /MWh
Description	Operating Margin CO ₂ emission factor for the Indian Grid in year y
Source of data	CEA's "Baseline Carbon Dioxide Emission Database Version 14.0" https://cea.nic.in/cdm-co2-baseline-database/?lang=en
Value applied	0.9610
Justification of choice of data or description of measurement methods and procedures applied	Calculated in line with "Tool to calculate the emission factor for an electricity system (Version 07.0.0)" using data from Central Electricity Authority of India's (CEA) "Baseline Carbon Dioxide

	Emission Database Version 14.0". The value used is calculated ex-ante as generation based weighted average of last three years of the operating margin provided in the CEA database. Weighted average $= \frac{\sum_{i=1 \text{ to } n} (\text{Net generation in operating margin in year } i * \text{Simple operating margin in year } i)}{\sum_{i=1 \text{ to } n} (\text{Net generation in operating margin of year } i)}$
Purpose of Data	Calculation of baseline emissions
Comments	This parameter is fixed ex-ante for the entire crediting period

Data / Parameter	EF_{grid, BM, y}
Data unit	tCO ₂ /MWh
Description	Build Margin CO ₂ emission factor for the India Grid in year y
Source of data	CEA's "Baseline Carbon Dioxide Emission Database Version 14.0 https://cea.nic.in/cdm-co2-baseline-database/?lang=en
Value applied	0.8644
Justification of choice of data or description of measurement methods and procedures applied	Calculated in line with "Tool to calculate the emission factor for an electricity system (Version 07.0.0)" using data from Central Electricity Authority of India's (CEA) "Baseline Carbon Dioxide Emission Database Version 14.0". The value is calculated ex-ante as most recent build margin provided by the CEA.
Purpose of Data	Calculation of combined margin emission
Comments	This parameter is fixed ex-ante for the entire crediting period

Data / Parameter	EF_{grid, CM, y}
Data unit	tCO ₂ /MWh
Description	Combined Margin CO ₂ emission factor for the India Grid in year y
Source of data	Central Electricity Authority (CEA) of India Database Version 14.0 https://cea.nic.in/cdm-co2-baseline-database/?lang=en
Value applied	0.9368
Justification of choice of data or description of measurement methods and procedures applied	This has been calculated based on Operating Margin (OM) and Build Margin (BM) published by Central Electricity Authority (CEA) of India.
Purpose of Data	Calculation of baseline emissions

Comments	This parameter is fixed ex-ante for the entire crediting period
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4.2 Data and Parameters Monitored

Data / Parameter	EGPJ,y_WTG 0.85MW
Data unit	MWh
Description	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y in MWh
Source of data	Joint meter reading reports or Share certificate issued by GUVNL
Description of measurement methods and procedures to be applied	These values are monitored through the main meter readings or from check meters as per emergency preparedness procedure. This parameter accounts for the project imports and export, hence showing the net (export – import) electricity supplied to the grid. The difference of final value of export and import is used for monthly values of net electricity supplied to the grid by the project activity and same value is considered for ER calculations
Frequency of monitoring/recording	Continuous measurement and monthly recording.
Value monitored	4,834.09
Monitoring equipment	Energy meters Please refer appendix 1 for meter and calibration details
QA/QC procedures to be applied	The energy meters are of 0.2S accuracy class and Calibration of the meter done at least once in 3 years as per the registered PD. However, the meters have been calibrated annually which is conservative. The main and check meters are calibrated and maintained by GEDA/GETCO as per their own schedule and this frequency of meter calibration is not within the control of the Project Proponent. The supply of electricity to the grid can also be cross checked from invoices raised to the DISCOM.
Purpose of the data	For the calculation of Baseline Emissions
Calculation method	NA
Comments	Data will be kept for crediting period + 2 Years

Data / Parameter	EGPJ,y_WTG2MW
Data unit	MWh

Description	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y in MWh
Source of data	Joint meter reading reports or Certificate from Karnataka Power Transmission Corporation Limited (KPTCL)
Description of measurement methods and procedures to be applied	These values are monitored through the main meter readings or from check meters as per emergency preparedness procedure. This parameter accounts for the project imports and export, hence showing the net (export – import) electricity supplied to the grid. The difference of final value of export and import is used for monthly values of net electricity supplied to the grid by the project activity and same value is considered for ER calculations
Frequency of monitoring/recording	Continuous measurement and monthly recording
Value monitored	21,013.93
Monitoring equipment	Energy meters Please refer appendix 1 for meter and calibration details
QA/QC procedures to be applied	The energy meters are of 0.2S accuracy class and Calibration of the meter done at least once in 3 years as per the registered PD. However, the meters have been calibrated annually which is conservative. The main and check meters are calibrated and maintained by BESCO as per their own schedule and this frequency of meter calibration is not within the control of the Project Proponent. The supply of electricity to the grid can also be cross checked from invoices raised to the DISCOM.
Purpose of the data	For the calculation of Baseline Emissions
Calculation method	NA
Comments	Data will be kept for crediting period + 2 Years
Data / Parameter	EGPJ,y_3.5MWSolar
Data unit	MWh

Description	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y in MWh
Source of data	Joint meter reading reports or Certificate from Karnataka Power Transmission Corporation Limited (KPTCL)
Description of measurement methods and procedures to be applied	These values are monitored through the main meter readings or from check meters as per emergency preparedness procedure. This parameter accounts for the project imports and export, hence showing the net (export – import) electricity supplied to the grid. The difference of final value of export and import is used for monthly values of net electricity supplied to the grid by the project activity and same value is considered for ER calculations.
Frequency of monitoring/recording	Continuous measurement and monthly recording
Value monitored	18,627.66
Monitoring equipment	Energy meters Please refer appendix 1 for meter and calibration details
QA/QC procedures to be applied	The energy meters are of 0.2S accuracy class and Calibration of the meter done at least once in 3 years as per the registered PD. However, the meters have been calibrated annually which is conservative. The main and check meters are calibrated and maintained by BESCOM as per their own schedule and this frequency of meter calibration is not within the control of the Project Proponent. The supply of electricity to the grid can also be cross checked from invoices raised to the DISCOM.
Purpose of the data	For the calculation of Baseline Emissions
Calculation method	NA
Comments	Data will be kept for crediting period + 2 Years

4.3 Monitoring Plan

The project activity is operated and managed by the project proponent with the help of site in charge (person from the project proponent) and site O & M contractors. The details of the O&M contractors are as per below:

Type	Location-State	Installed Capacity	Name of O&M contractor
Wind	Gujarat	0.85 MW	Gamesa Renewable Pvt Ltd
Wind	Karnataka	2.0 MW	Siemens Gamesa Renewable Pvt Ltd
Solar	Karnataka	3.5 MW	Diwakar Soltek Pvt Ltd

For the accurate execution of the Project activity a project team has been constructed. The project abides to all regulatory requirements as prescribed under the state and central laws and regulations. The project team is delegated with the responsibility of monitor and record the electricity generated and also safekeeping of the recorded data. The project team is also responsible for calculation of actual creditable emission reduction in the most transparent and relevant manner.

QA/QC Procedures

The energy meter of 0.2s accuracy class is used. The individual inverters/WTGs are also equipped with digital energy meters. If some defect occurs to energy meters, the reading taken at these meters is used for calculation of net electricity supplied. All energy meters are calibrated at least once in a three-year. However, the energy meters installed at grid feeder are owner and maintained by DISCOMS, PP has no control on the calibration of those meters.

Data Management and Data Archiving

Monitoring data is retained and archived for the entire crediting period plus two years by the project proponent.

Emergency Plan

Operation and maintenance team is trained for emergency situations.

Training

Operation and maintenance team are trained staff on operation and maintenance aspects of the plant. The training ensures the preventive maintenance and better operational control of the plant.

Data Adjustments & Uncertainties

If there is any problem in energy meters, digital meters at inverters will be used for monitoring. If a situation appears that any meter is faulty then the energy meter is sent for maintenance and maintaining a conservative approach, VCUs would be calculated from reading taken at inverters deducting technical losses at inverters. Technical losses calculated based on historical generation (previous one month) of reading at inverters less meter readings or as per manufacturer specification. Similarly, the backup meters could be used in case of the fault in meter for WTGs.

The VCS monitoring team is composed of the following staff:

Position	Report to
Operators	Site Engineers
Site Engineers	Site In-charge

Site In-charge	Project Owner
VCS Project Manager	Project Owner

5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

5.1 Baseline Emissions

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

$$EF_{grid,y} = 0.9368 \text{ tCO}_2\text{e/MWh}$$

$$EG_{PJ,y} = EG_{PJ,0.85MW} + EG_{PJ,2MW} + EG_{PJ,3.5MW}$$

$$EG_{PJ,y_WTG0.85MW} = 4,834.09 \text{ MWh}$$

$$EG_{PJ,y_WTG2MW} = 21,013.93 \text{ MWh}$$

$$EG_{PJ,y_3.5MWSolar} = 18,627.66 \text{ MWh}$$

Hence, baseline emission is

$$BE_y = (4,834.09 + 21,013.93 + 18,627.66) \times 0.9368 = 41,663 \text{ tCO}_2\text{e}$$

$$BE_y = 41,663 \text{ tCO}_2\text{e (Rounded down)}$$

5.2 Project Emissions

As per the approved methodology AMS-I.D. version 18, para 39, For most renewable energy project activities, project emissions i.e., $PE_y = 0$.

As the proposed project activity is installation of new wind and solar energy-based power plants, it does not involve any project emissions. Hence $PE_y = 0$.

5.3 Leakage

No other leakage emissions are considered. The emissions potentially arising due to activities such as power plant construction and upstream emissions from fossil fuel use (e.g., extraction, processing, transport etc.) are neglected.

$$\text{Leakage Emissions } LE_y = 0$$

5.4 Net GHG Emission Reductions and Removals

Net GHG Emission Reductions are calculated as

$$ER_y = BE_y - PE_y - LE_y$$

ER_y = Emissions Reductions in year y (tCO₂)

BE_y = Baseline Emissions in year y (tCO₂)

PE_y = Project Emissions in year y (tCO₂)

LE_y = Leakage Emissions in year y (tCO₂)

As mentioned in earlier section PE_y and LE_y are considered zero.

Hence,

$$ER_y = BE_y - 0 - 0$$

$$ER_y = 41,663 - 0 - 0$$

$$ER_y = 41,663 \text{ tCO}_2\text{e}$$

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
Year				
08-March-2018 – 31-December-2018	5,159	0	0	5,159
01-January-2019 – 31-December -2019	7,406	0	0	7,406
01- January -2020 – 31- December -2020	9,058	0	0	9,058
01- January -2021 – 31- December -2021	11,886	0	0	11,886
01- January -2022 – 31- August-2022	8,154	0	0	8,154
Total	41,663	0	0	41,663

Emission reduction during the monitoring period that (08- March-2018 to 31-August-2022) is reduced to 41,663 tCO₂e.

<u>Ex-ante emissions reduction s/removal s</u>	<u>Achieved emissions reductions /removals</u>	<u>Percent difference</u>	<u>Justification for the difference</u>
53,143	41,663	-21.60%	The emission reduction achieved during the current monitoring period is lower than the ex-ante estimation for the same period. This is due to lower PLF achieved during the current monitoring period.

APPENDIX I: CALIBRATION DETAILS

0.85 MW Wind Energy Plant	
MAIN METER	CHECK METER
Make - Secure Serial Number - XD550597 Accuracy class - 0.2 Calibration date - 10/12/2018, 09/11/2019, 12/12/2020, 07/11/2021	Make - L&T Serial Number: GJ-2325-A Accuracy class: 0.2s Calibration date - 10/12/2018, 09/11/2019, 12/12/2020, 07/11/2021
2 MW Wind Energy Plant	
MAIN METER	CHECK METER
Make - L & T Serial Number - 17054717 Accuracy class - 0.2	Make - L & T Serial Number - 17054711 Accuracy class - 0.2
The main and check meters were replaced with new meters with compatible CTs & PT at both Injection point of IPPs on 11/09/2018.	
Make - L & T Serial Number - 18077778 Accuracy class - 0.2 Calibration date - 15/03/2019, 12/06/2020, 17/06/2021	Make - L & T Serial Number - 18053894 Accuracy class - 0.2 Calibration date - 15/03/2019, 12/06/2020, 17/06/2021
The check meter was replaced as there was error found in the existing one on 31/12/2021.	
Make - L & T Serial Number - 18077778 Accuracy class - 0.2 Calibration date - 31/12/2021	Make - L & T Serial Number - 18077740 Accuracy class - 0.2 Calibration date - 31/12/2021
3.5 MW Solar Energy Plant	
MAIN METER	CHECK METER
Type - L & T Serial Number - 18075405 Accuracy class - 0.2s Calibration date - 12/02/2019, 22/01/2020	Type - L & T Serial Number - 18069071 Accuracy class - 0.2s Calibration date - 12/02/2019, 22/01/2020
The main and check meter were replaced by SCADA compatible RS 485 communication ETV meter on 02/12/2020.	
Type - L & T Make - 3ph-4Wire Serial Number - 20005930 Accuracy class - 0.2s Calibration date - 12/10/2021	Type - L & T Make - 3ph-4Wire Serial Number - 20006037 Accuracy class - 0.2s Calibration date - 12/10/2021