

Gold standard for the global goals
Monitoring report



June 2017, version 1

Title of the project	252 MW Wind Energy Project by Green Infra Wind Energy Limited
Gold Standard project id	GS 7152
Version number of the monitoring report	02
Completion date of the monitoring report	26/08/2020
Date of project design certification	30/03/2020
Start date of crediting period	25/06/2019 ¹
Duration of this monitoring period	25/06/2019 to 30/06/2020 (Inclusive of both the dates)
Duration of previous monitoring period	Not Applicable
Project representative(s)	Green Infra Wind Energy Limited
Host Country	India
Certification pathway (activity certification/impact certification)	Impact Certification
SDG Contributions targeted (as per approved PDD)	1 – SDG 7 – Affordable and Clean Energy Contribution to Climate Security & Sustainable Development 2 – SDG 8 – Decent Work and Economic Growth 3 – SDG 13 – Climate Action
Gold Standard statement/product certification sought (GSVER/ADALYs/RECs etc.)	GSVER
Selected methodology(ies)	ACM0002- Grid-connected electricity generation from renewable sources Version 20.0 ²
Estimated amount of annual average certified SDG impact (as per approved PDD)	808,833 tCO _{2e} / annum (for SDG 13) 858,725 MWh/annum (for SDG 7) 1 training /annum and 10 people employed (for SDG 8)
Total amount of certified SDG impact (as per approved methodology) achieved in this monitoring period	524,227 tCO _{2e} (for SDG 13) 556,508.83 MWh (for SDG 7) 8 trainings were conducted and 40 people have been employed (for SDG 8)

¹ The project is registered under Retroactive Mechanism. So, the start date of crediting period can be from two years before the registration date. But as the project was commissioned on 25/06/2019, the start date of crediting period has been taken since then.

² <https://cdm.unfccc.int/methodologies/DB/XP2LKUSA61DKUQC0PIWPGWDN8ED5PG>

SECTION A. Description of project

A.1. Purpose and general description of project

The purpose of the project activity is to generate power using renewable energy source (wind energy) and sell the power generated to the National grid. The project activity generates electricity using wind energy. The generated electricity is exported to the Indian grid system, which is under the purview of the INDIAN electricity grid of India.

The project activity replaces anthropogenic emissions of greenhouse gases estimated to be approximately 808,833 tCO₂e per year, thereon displacing 858,725 MWh/year amount of electricity from the generation-mix of power plants connected to the INDIAN GRID, which is mainly dominated by thermal/ fossil fuel based power plant.

The total installed capacity of the current project activity is 252 MW; which involves operation of WTGs in the state of Gujarat in India.

Project Investor	Project Type	Project Capacity	Date of Commissioning	State	Usage
Green Infra Wind Energy Limited	Wind	126 MW	25/06/2019	Gujarat	Sale to SECI
		54.6 MW	22/10/2019		
		50.4 MW	04/01/2020		
		21 MW	07/02/2020		

The project activity is a new facility (Greenfield) and the purpose of the project activity is to generate energy electricity by the utilization of renewable wind energy and further selling the generated energy to the Indian Grid. In this process, there is no consumption of any fossil fuel and hence, the project does not lead to any greenhouse gas emissions. Thus, electricity is generated through sustainable means without causing any negative impact on the environment.

In the Pre-project scenario the entire 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.

During the current monitoring period 25/06/2019 to 30/06/2020 (Inclusive of both the dates), the project resulted in emission reductions of 524,227 tCO₂e and underwent continued operation other than scheduled maintenance and breakdowns.

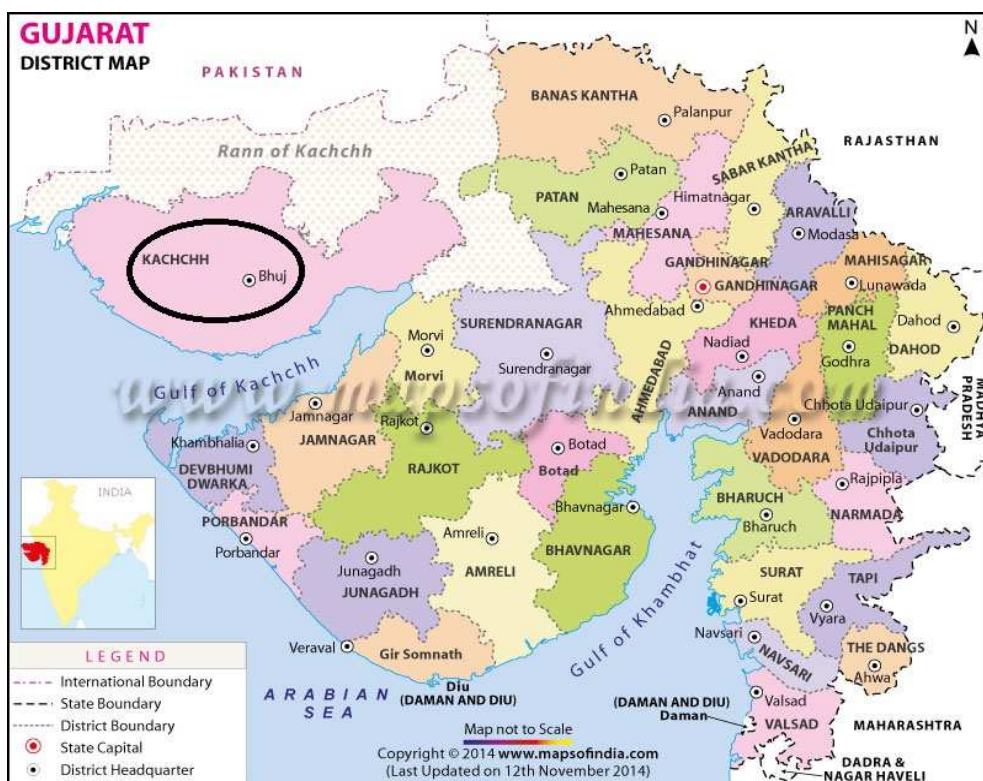
Vintage wise emission reduction during the entire Monitoring Period are as follows:

Year	Amount
25/06/2019 to 31/12/2019	196,409
01/01/2020 to 30/06/2020	327,818

A.2. Location of project

This Project activity is located in Dasalpur site, Taluka Bhuj, District Kutch, Gujarat.

The location of the project activity has been highlighted in the map shown below:



The geo coordinates of all the WTGs of the project activity has been provided in the table below

SL. No	Project Investor	WTG ID	Latitude	Longitude
1	Green Infra Wind Energy Limited	ROH141	23° 16' 05.64"	69° 15' 05.43"
2		ROH144	23° 14' 57.11"	69° 15' 11.00"
3		ROH145	23° 14' 20.65"	69° 17' 09.21"
4		ROH146	23° 14' 04.24"	69° 17' 04.39"
5		ROH147	23° 14' 45.94"	69° 15' 20.94"
6		ROH151	23° 14' 57.93"	69° 16' 05.48"
7		ROH152	23° 15' 09.04"	69° 16' 50.20"
8		ROH175	23° 14' 00.66"	69° 17' 36.97"
9		DSP012	23° 07' 59.15"	69° 21' 29.09"
10		DSP016	23° 08' 38.29"	69° 21' 49.59"
11		DSP017	23° 08' 15.97"	69° 21' 40.50"
12		DSP018	23° 08' 15.62"	69° 22' 20.72"
13		DSP019	23° 07' 48.54"	69° 22' 29.26"
14		DSP020	23° 08' 50.37"	69° 21' 56.70"
15		DSP039	23° 08' 51.15"	69° 22' 27.12"
16		DSP 042	23° 09' 37.90"	69° 22' 05.62"
17		DSP 044	23° 10' 12.06"	69° 22' 39.58"
18		DSP 045	23° 10' 23.83"	69° 21' 44.39"
19		DSP 046	23° 10' 40.13"	69° 21' 39.93"
20		DSP 051	23° 10' 34.14"	69° 23' 58.96"
21		DSP 052	23° 10' 11.14"	69° 23' 49.57"
22		DSP 053	23° 09' 57.51"	69° 23' 49.14"
23		DSP 067	23° 07' 57.87"	69° 24' 15.83"
24		DSP074	23° 11' 02.50"	69° 24' 20.85"
25		DSP075	23° 11' 28.16"	69° 23' 56.73"

26		DSP 078	23° 11' 53.54"	69° 24' 38.98"
27		DSP 079	23° 12' 03.65"	69° 24' 17.48"
28		DSP 089	23° 09' 08.97"	69° 25' 38.19"
29		DSP 090	23° 08' 57.83"	69° 25' 45.97"
30		DSP 096	23° 07' 44.25"	69° 26' 27.71"
31		DSP 098	23° 07' 06.39"	69° 26' 06.81"
32		DSP 104	23° 08' 39.91"	69° 27' 29.96"
33		DSP 105	23° 08' 55.83"	69° 27' 13.07"
34		DSP106	23° 09' 31.54"	69° 27' 01.23"
35		DSP112	23° 11' 27.26"	69° 27' 16.11"
36		DSP113	23° 10' 56.12"	69° 27' 45.94"
37		DSP115	23° 10' 34.44"	69° 28' 05.17"
38		DSP116	23° 10' 07.69"	69° 27' 37.22"
39		DSP136	23° 11' 07.40"	69° 29' 11.38"
40		DSP146	23° 07' 55.37"	69° 27' 02.88"
41		DSP147	23° 07' 32.45"	69° 22' 00.88"
42		DSP148	23° 09' 34.33"	69° 22' 53.72"
43		DSP160	23° 04' 47.87"	69° 23' 35.68"
44		DSP162	23° 05' 43.94"	69° 23' 05.37"
45		DSP169	23° 04' 25.45"	69° 23' 25.39"
46		DSP170	23° 04' 24.99"	69° 22' 48.59"
47		DSP171	23° 04' 11.18"	69° 22' 56.53"
48		DSP181	23° 07' 11.39"	69° 25' 45.59"
49		DSP 183	23° 06' 17.72"	69° 26' 15.62"
50		DSP185	23° 08' 17.85"	69° 23' 48.15"
51		DSP 191	23° 05' 25.78"	69° 21' 18.78"
52		DSP225	23° 10' 43.33"	69° 23' 39.08"
53		DSP253	23° 05' 34.49"	69° 23' 28.19"
54		FUL001	23° 11' 27.55"	69° 28' 23.33"
55		FUL002	23° 11' 34.29"	69° 27' 48.67"
56		FUL 016	23° 16' 50.11"	69° 23' 24.17"
57		FUL 017	23° 15' 53.74"	69° 23' 45.97"
58		FUL 018	23° 16' 05.31"	69° 23' 32.77"
59		FUL 019	23° 15' 47.45"	69° 25' 16.73"
60		FUL 034	23° 16' 04.62"	69° 24' 29.26"
61		FUL 036	23° 16' 00.33"	69° 25' 16.73"
62		FUL075	23° 15' 25.24"	69° 26' 39.22"
63		FUL076	23° 15' 07.52"	69° 26' 49.40"
64		FUL078	23° 14' 21.77"	69° 26' 49.22"
65		FUL093	23° 13' 55.30"	69° 27' 56.83"
66		FUL094	23° 14' 11.78"	69° 27' 47.56"
67		FUL095	23° 14' 35.49"	69° 27' 35.08"
68		FUL096	23° 14' 53.81"	69° 27' 39.93"
69		FUL097	23° 15' 03.08"	69° 27' 17.97"
70		FUL098	23° 15' 25.70"	69° 27' 24.69"
71		FUL 114	23° 16' 19.62"	69° 24' 10.90"
72		FUL 158	23° 16' 29.35"	69° 23' 28.62"
73		FUL 159	23° 16' 28.45"	69° 25' 32.13"
74		FUL 160	23° 16' 36.93"	69° 24' 47.03"
75		PLD036	23° 04' 53.12"	69° 16' 35.04"
76		PLD040	23° 03' 41.71"	69° 18' 32.20"

77		PLD041	23° 03' 49.88"	69° 17' 56.48"
78		PLD 042	23° 03' 32.02"	69° 17' 43.72"
79		PLD044	23° 04' 15.32"	69° 16' 20.69"
80		PLD046	23° 04' 25.60"	69° 15' 56.53"
81		PLD047	23° 05' 06.91"	69° 16' 10.32"
82		PLD051	23° 06' 00.59"	69° 13' 35.29"
83		PLD052	23° 06' 22.52"	69° 13' 28.72"
84		PLD053	23° 06' 37.26"	69° 13' 39.96"
85		PLD054	23° 06' 51.32"	69° 13' 31.72"
86		PLD066	23° 07' 23.85"	69° 10' 55.73"
87		PLD 072	23° 08' 00.03"	69° 10' 37.39"
88		PLD 073	23° 07' 22.01"	69° 09' 47.59"
89		PLD 074	23° 07' 05.35"	69° 09' 48.13"
90		PLD107	23° 05' 58.99"	69° 16' 43.05"
91		PLD108	23° 05' 39.61"	69° 16' 58.33"
92		PLD176	23° 04' 29.37"	69° 18' 23.66"
93		PLD177	23° 04' 23.87"	69° 18' 44.63"
94		ROH194	23° 09' 17.72"	69° 18' 22.17"
95		ROH195	23° 09' 19.86"	69° 17' 51.72"
96		ROH196	23° 09' 44.11"	69° 17' 57.72"
97		ROH197	23° 09' 51.25"	69° 17' 29.92"
98		ROH 207	23° 10' 48.59"	69° 19' 41.00"
99		ROH217	23° 08' 37.31"	69° 13' 49.06"
100		ROH218	23° 08' 59.26"	69° 13' 27.61"
101		ROH221	23° 09' 28.29"	69° 15' 20.97"
102		ROH222	23° 09' 45.48"	69° 15' 50.76"
103		ROH223	23° 09' 58.37"	69° 15' 40.80"
104		ROH224	23° 10' 17.65"	69° 15' 27.12"
105		ROH 226	23° 10' 54.73"	69° 15' 58.42"
106		ROH237	23° 13' 52.32"	69° 15' 01.03"
107		ROH239	23° 14' 20.09"	69° 14' 40.28"
108		ROH303	23° 08' 18.15"	69° 12' 42.42"
109		ROH304	23° 08' 50.75"	69° 16' 28.35"
110		ROH 305	23° 10' 02.95"	69° 17' 18.69"
111		ROH 307	23° 14' 56.27"	69° 16' 45.85"
112		ROH 308	23° 15' 09.50"	69° 17' 39.83"
113		ROH333	23° 09' 32.56"	69° 18' 37.93"
114		ROH 345	23° 09' 30.46"	69° 16' 41.34"
115		ROH346	23° 10' 02.86"	69° 15' 03.24"
116		ROH 354	23° 12' 43.13"	69° 17' 41.05"
117		ROH 356	23° 13' 42.38"	69° 18' 15.91"
118		FLR 203	23° 15' 50.09"	69° 28' 07.89"
119		FLR 204	23° 15' 37.80"	69° 28' 06.20"
120		FLR 207	23° 13' 42.92"	69° 28' 24.94"

A.3. Reference of applied methodology

Title : Grid-connected electricity generation from renewable sources
Reference : The project activity meets the eligibility criteria of large-scale project, as it is more than 15 MW

Methodology : ACM0002: Grid-connected electricity generation from renewable sources - Version 20.0³
Type I : Energy industries (renewable / non-renewable sources)
Category : Approved Consolidated Methodology (ACM0002)

Tools referred with above methodology and applicable for project activity are:

- Tool to calculate the emission factor for an electricity system⁴ - Version 07.0 (EB 100, Annex 04)
- Tool for the demonstration and assessment of additionality⁵ - Version 07.0.0 (EB 70, Annex 08)
- Common Practice, version 3.1 EB 84, Annex 7⁶

A.4. Crediting period of project

Start date of Crediting period	25/06/2019
Crediting Period	25/06/2019 to 24/06/2024
Duration	5 Years
Type	Renewable

SECTION B. Implementation of project

B.1. Description of implemented project

The total installed capacity of the project is 252 MW, which comprises of total 120 number of Wind Turbine Generator (WTG) in Gujarat. The WTGs used in the project activity are of Suzlon⁷.

The technical specification of the Suzlon WTGs are as follows:

Particulars	Details
WTG Make and Model No.	Suzlon S111
Generator Type & Rating	Doubly-Fed Induction generator, 2100 kW
WTG configuration	120 X 2100 kW
Rotor Diameter	111.8 m
Swept Area	9,852 m ²
Hub Height	120 m
Cut-in-wind speed	3.0 m/s
Rated wind speed	12.5 m/s
Cut-out wind speed	30.0 m/s (3-second average); 21.0 m/s (10-minute average)

Technology Transfer

No technology transfer from other countries is involved in the project.

B.2. Post-registration changes

B.2.1. Temporary deviations from Certified Key Project Information, Project Design Document, Monitoring & Reporting Plan, applied methodology or applied standardized baseline.

There is no request for deviation applied during this monitoring period.

³ <https://cdm.unfccc.int/methodologies/DB/XP2LKUSA61DKUQC0PIWPGWDN8ED5PG>

⁴ <http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf>

⁵ <http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf>

⁶ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-24-v1.pdf>

⁷ https://www.suzlon.com/pdf/S111_product_brochure_sept_2018.pdf

B.2.2. Corrections

There have not been any corrections to project information or parameters fixed at validation during the current monitoring period.

B.2.3. Changes to start date of crediting period

Not Applicable as there has been no changes to the start date of crediting period.

B.2.4. Permanent changes from registered monitoring plan, applied methodology or applied standardized baseline

Not Applicable.

B.2.5. Changes to project design of approved project

There has not been any change in the PDD during the current monitoring period.

SECTION C. Description of monitoring system applied by the project

Aim of monitoring:

The monitoring methodology specified in the methodology requires that the project-monitoring plan to consist of monitoring of quantity of net electricity supplied to the grid in the year y. In order to monitor the mitigation of GHG due to the project activity, the total energy exported is measured. The net energy supplied to grid by the project activity multiplied by emission factor for Indian grid, forms the baseline for the project activity.

Since the baseline emission factor is based on an ex-ante determination, monitoring of this parameter is not required. The sole parameter for monitoring is the net electricity exported to the grid.

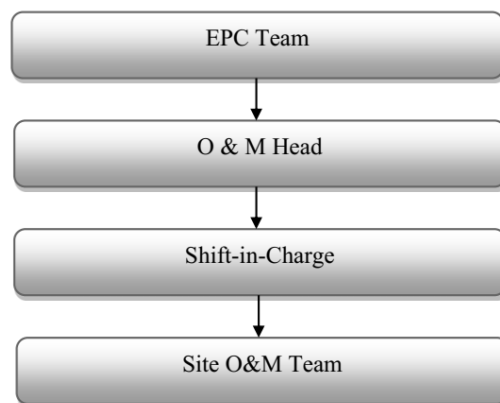
Monitoring roles and responsibilities

The operational and management structure implemented for data monitoring is as follows:

The monitoring plan is developed in accordance with the modalities and procedures for project activities and is proposed for grid-connected wind power project being implemented within India territory. The monitoring plan, which is implemented by the project proponent describes about the monitoring parameters to be monitored, monitoring practices, quality assurance, quality control procedures, data storage and archiving.

The authority and responsibility for monitoring, measurement, reporting and reviewing of the data rests with the project proponent. PP proposed the following structure for data monitoring, collection, data archiving and calibration of equipments for this project activity.

The team comprises of the following members:



Responsibilities of O&M Head: Overall functioning and maintenance of the project activity and overall responsibility of compliance with the Monitoring Plan.

Responsibilities of Plant In-charge: Responsibility for Maintains the data records, ensures completeness of data, and reliability of data. Regularly verifying the monthly energy generation date with installed meters reading for identification of any discrepancies in data collection and taking suitable action to rectify them.

Responsibilities of Shift In-charge: Responsibility for day-to-day data collection and maintains day-to-day logbook for monitored data. Responsibility for monthly and annual report generation. Quality assurance of the data/reports and preliminary check of data for any discrepancies.

QA/QC procedures: The energy meters are owned by state utility. Neither the project proponent nor the site personnel have any control over it. The records will be crosschecked through online. The meters are calibrated by the state utility at-least once in five years.

Data Measurement: The export and import energy are measured continuously, using above-mentioned Main & Check meters. Export & Import readings of Main & Check meters are monitored through online system and the electricity data can be viewed through online. PP gets the data of net electricity supplied to grid and same is used for emission reduction calculations.

Data Archiving: Monthly/weekly data are archived electronically and in paper form and stored for the entire crediting period and two years thereafter.

Emergency preparedness: The project activity will not result in any unidentified activity that can result in substantial emissions from the project activity. No need for emergency preparedness in data monitoring is visualized.

In the event that the main meter, used to record the net electricity exported by the project, is found to be faulty, it will be repaired or replaced and the data from the check meter will be used in its place. In the unlikely event that the check meter fails, it will also be repaired or replaced.

Training and maintenance requirements: Each site personnel is provided with proper training to meet the requirements of the Operations and maintenance. This ultimately leads to creativity in problem solving.

Personnel training: In order to ensure a proper functioning of the project activity and a properly monitoring of emission reductions, the staff are trained. The plant helpers are trained in equipment operation, data recording, reports writing, operation and maintenance and emergency procedures in compliance with the monitoring plan.

Apportioning: In case of mismatch of date between the start date of the billing cycle and the start date of monitoring period the data will be apportioned in line to the daily generation values for the said mismatch period.

SECTION D. Data and parameters

D.1. Data and parameters fixed ex ante or at renewal of crediting period

a. SDG13: Climate Action: The project would lead to reduction of approx. 808,833 tCO₂e per annum

b. SDG 7: Affordable and Clean Energy: The project is expected to generate 858,725 MWh of clean energy per annum

c. SDG 8: Decent Work and Economic Growth: The project provides employment to around 10 persons

Relevant SDG Indicator	SDG 13
Data/parameter	EF _{grid,OM,y}
Unit	tCO ₂ /MWh
Description	Operating Margin CO ₂ emission factor in year y
Source of data	Calculated from CEA database, Version 15, Dec 2019 ⁸
Value(s) applied)	0.9622
Choice of data or measurement methods and procedures	Calculated as per "Tool to calculate the emission factor for an electricity system, version 07" as per the latest data available for the most three recent years 2016-17, 2017-18 and 2018-19. The data is obtained from "CO ₂ Baseline Database for Indian Power Sector" version 15, published by the Central Electricity Authority, Ministry of Power, Government of India.
Purpose of data	For the calculation of the Baseline Emission
Additional comments	This parameter is fixed ex-ante for the entire crediting period.

Relevant SDG Indicator	SDG 13
Data/parameter	EF _{grid,BM,y}
Unit	tCO ₂ /MWh
Description	Build Margin CO ₂ emission factor in year y
Source of data	Calculated from CEA database, Version 15, Dec 2019 ⁹
Value(s) applied)	0.8811
Choice of data or measurement methods and procedures	Calculated as per "Tool to calculate the emission factor for an electricity system, version 07" as per the latest data available for the most recent year 2018-19. The data is obtained from "CO ₂ Baseline Database for Indian Power Sector" version 15, published by the Central Electricity Authority, Ministry of Power, Government of India.
Purpose of data	For the calculation of the Baseline Emission
Additional comments	This parameter is fixed ex-ante for the entire crediting period.

Relevant SDG Indicator	SDG 13
Data/parameter	EF _{grid,CM,y}
Unit	tCO ₂ /MWh
Description	Combined Margin CO ₂ emission factor in year y

⁸ http://www.cea.nic.in/reports/others/thermal/tpece/cdm_co2/user_guide_ver15.pdf

⁹ http://www.cea.nic.in/reports/others/thermal/tpece/cdm_co2/user_guide_ver15.pdf

Source of data	Calculated from CEA database, Version 15, Dec 2019 ¹⁰
Value(s) applied)	0.9420
Choice of data or measurement methods and procedures	The combined margin emissions factor is calculated as follows: $EF_{grid,CM,y} = EF_{grid,OM,y} * W_{OM} + EF_{grid,BM,y} * W_{BM}$ Where: $EF_{grid,BM,y}$ = Build margin CO₂ emission factor in year y (tCO₂/MWh) $EF_{grid,OM,y}$ = Operating margin CO₂ emission factor in year y (tCO₂/MWh) W_{OM} = Weighting of operating margin emissions factor (%) = 75% W_{BM} = Weighting of build margin emissions factor (%) = 25%
Purpose of data	For the calculation of the Baseline Emission
Additional comments	This parameter is fixed ex-ante for the entire crediting period.

D.2. Data and parameters monitored

Relevant SDG Indicator	7.2.1 Renewable energy share in the total final energy consumption								
Data/parameter	EGPJ,y								
Unit	MWh								
Description	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y in MWh								
Measured/calculated/default	Measured								
Source of data	As per estimated ER sheet. During the verification, the results are obtained from the Regional Energy Account (REA) statement issued by WRPC.								
Value(s) of monitored parameter	556,508.83 MWh <table><tr><th>Year</th><th>Net power generated</th></tr><tr><td>2019</td><td>208,504.14 MWh</td></tr><tr><td>2020</td><td>348,004.69 MWh</td></tr></table>			Year	Net power generated	2019	208,504.14 MWh	2020	348,004.69 MWh
Year	Net power generated								
2019	208,504.14 MWh								
2020	348,004.69 MWh								
Monitoring equipment	Main Meters & Check Meters								
Measuring/reading/recording frequency	Monthly recording								
Calculation method (if applicable)	The REA statement issued by WRPC contains the information of the Scheduled Power, Actual Power and the Deviation between actual & scheduled power. The scheduled power being feed into the grid can be crosschecked from the monthly Invoices raised by the PP. For ER calculations, the values of Actual power is considered.								
QA/QC procedures	Electricity exported by the project to the grid at project site switchyard is the actual generation recorded and monitored by the metering system installed at the project site switchyard. The energy meters are special energy meters, which are installed and sealed by the Power Grid Corporation of India Limited, in the presence of the representatives of the power producer. The check meter shall be used during the period, when the main metering system is not in service.								
Purpose of data	To Monitor the SDG 7 Indicator								
Additional comments	Data is archived in paper & electronic form for two years after the end of crediting period or of the last issuance of GS-VERs for this project activity, whichever occurs later.								

¹⁰ http://www.cea.nic.in/reports/others/thermal/tpece/cdm_co2/user_guide_ver15.pdf

Relevant SDG Indicator	SDG 13							
Data/parameter	ER _y							
Unit	tCO ₂ e/year							
Description	Emission reductions achieved per year							
Measured/calculated/default	Calculated							
Source of data	As per Actual Emission Reduction sheet							
Value(s) of monitored parameter	524,227 tCO ₂ e <table border="1"><thead><tr><th>Year</th><th>Emission Reductions achieved</th></tr></thead><tbody><tr><td>2019</td><td>196,409 tCO₂e</td></tr><tr><td>2020</td><td>327,818 tCO₂e</td></tr></tbody></table>		Year	Emission Reductions achieved	2019	196,409 tCO ₂ e	2020	327,818 tCO ₂ e
Year	Emission Reductions achieved							
2019	196,409 tCO ₂ e							
2020	327,818 tCO ₂ e							
Monitoring equipment	Not Applicable							
Measuring/reading/recording frequency	Monthly recording							
Calculation method (if applicable)	The baseline emissions are the product of electrical energy baseline EG _{PJ,y} expressed in MWh of electricity produced by the renewable generating unit multiplied by an emission factor.							
QA/QC procedures	Not Applicable							
Purpose of data	To Monitor the SDG 13 Indicator							
Additional comments	Data is archived in paper & electronic form for two years after the end of crediting period or of the last issuance of GS-VERs for this project activity, whichever occurs later							

Relevant SDG Indicator	8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities														
Data/parameter	Number of employment generation and Salary														
Unit	Number														
Description	Number of people employed directly due to the project activity														
Measured/calculated/default	-														
Source of data	Plant records, Salary slips or The training records for all the employees/Letter from O&M contractor for employment generation/ DOE interview with employees, local stakeholders etc.														
Value(s) of monitored parameter	2019 : 22 people were employed 2020: 18 people were employed Further below is the breakup of employment generated during the monitoring period <table border="1"> <thead> <tr> <th>Year</th><th>Skilled</th><th>Unskilled</th><th>Total</th></tr> </thead> <tbody> <tr> <td>2019</td><td>20</td><td>2</td><td>22</td></tr> <tr> <td>2020</td><td>16</td><td>2</td><td>18</td></tr> </tbody> </table> PP has provided salary slips and employment agreement of persons directly getting employment opportunity from the project activity. Further, the average hourly earnings of a person are higher than the local level. For e.g a person is getting a monthly salary of INR 62,000 then his average hourly earnings will be as follows: = 62,000/ (30*7) = INR 210. This is higher than the average wage per hour in India (Average hourly earnings of			Year	Skilled	Unskilled	Total	2019	20	2	22	2020	16	2	18
Year	Skilled	Unskilled	Total												
2019	20	2	22												
2020	16	2	18												

	highly skilled workers for Zone C is INR 26.85 ¹¹). Further, the same has been crosschecked by the VVB during on site visit by means of attendance register and physical interviews and Salary Slips. The Project thus provides employment opportunities, pays salaries and welfares, and helps to increase the income and living standards of the employees.
Monitoring equipment	-
Measuring/reading/recording frequency	Monthly monitoring and annual recording
Calculation method (if applicable)	The total number of persons working in the plant is calculated based on the daily log available at site. This parameter also monitor number of men/women employed by the project activity. The project activity ensures that “equal pay for work of equal value” for both men and women and there is no any discrimination against women. “The employment covers number of men and number of women employed by the project activity. The job is of type temporary/permanent or skilled/unskilled, local/ non-local etc. In addition, it is ensued that peoples get equal payment for equal work. The payment is based on work and no any gender inequality for payment for work of equal value”. Further, for all kind of jobs, local people are given preference, based upon their competency level.
QA/QC procedures	The number of persons employed is mentioned in the plant register, which can be crossed checked with attendance register.
Purpose of data	To Monitor the SDG 8 Indicator
Additional comments	-

Relevant SDG Indicator	-
Data/parameter	Workplace Health and Safety trainings
Unit	Number
Description	Mitigation measure to prevent violation or the risk of violating a safeguarding principle and address stakeholder comments
Measured/calculated/default	-
Source of data	Plant records or the training records, for all the employees, for the training given on workplace health and safety.
Value(s) of monitored parameter	2019 : 4 training were provided 2020: 4 training were provided
Monitoring equipment	-
Measuring/reading/recording frequency	Annual
Calculation method (if applicable)	Together with the technology supplier, the Project owner organise workplace health, emergency and safety procedures.
QA/QC procedures	The training records for all the employees on health and safety measures.
Purpose of data	To adopt mitigation measures to prevent violation or the risk of violating a safeguarding principle. Also, this will ensure that mitigation measures to address stakeholder concerns is being followed throughout the project life cycle.
Additional comments	Data are archived in paper & electronic form for two years after the end of crediting period or of the last issuance of GS-VERs for this project activity,

¹¹ <https://clc.gov.in/clc/min-wages>

	whichever occurs later.
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Relevant SDG Indicator	8.6.1 Proportion of youth (aged 15-24 years) not in education, employment or training				
Data/parameter	Quality of Employment				
Unit	-				
Description	Training of Staff				
Measured/calculated/default	-				
Source of data	Plant records or The training records for all the employees/Letter from O&M contractor for employment generation/ DOE interview with employees, local stakeholders etc.				
Value(s) of monitored parameter	Below is the schedule of Trainings conducted during the current monitoring period:				
	Sl. No	Topic	Date	Number of Participants	Duration
	1.	WTG Operations & Management	18/07/2019	26	4 hours
	2.	Behavioural Changes training	23/08/2019	40	3 hours
	3.	Fire Safety Training	24/08/2019	40	3 hours
	4.	Work at Height	23/11/2019	26	4 hours
	5.	Behavioural Changes training	30/01/2020	40	3 hours
	6.	Fire Safety Training	11/01/2020	40	3 hours
	7.	Work at Height	27/01/2020	26	4 hours
8.	WTG Operations & Management	18/01/2020	26	4 hours	
Monitoring equipment	-				
Measuring/reading/recording frequency	Annual recording				
Calculation method (if applicable)	Together with the technology supplier, the Project organise training for the staff on the technology and the monitoring of the plant operation, and the emergency and safety procedures.				
QA/QC procedures	The training records for all the employees				
Purpose of data	To Monitor the SDG 8 Indicator				
Additional comments	-				

D.3. Implementation of sampling plan

Not Applicable

SECTION E. Calculation of SDG outcomes

E.1. Calculation of baseline value or estimation of baseline situation of each SDG outcome

SDG 7: Affordable and Clean Energy and SDG 13: Climate Action

As per the approved methodology ACM0002, Version 20.0 (EB 105, Annex 3), CDM Sectoral Scope: 01, baseline emissions for the project activity is calculated by multiplying the net quantity of electricity supplied by this project activity ($EG_{PJ,y}$) with the CO₂ baseline emission factor for the electricity displaced due to the project ($EF_{grid,CM,y}$) as follows:

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

Where,

$EF_{grid,CM,y}$	=	Combined margin CO ₂ emission factor for grid connected power generation in year y calculated using the latest version of "TOOLo7: Tool to calculate the emission factor for an electricity system" (t CO ₂ /MWh)
$EG_{PJ,y}$	=	Net electricity supplied to the Indian grid (MWh)
BE_y	=	Baseline emissions in year y (tCO ₂)

Baseline emissions

$$\begin{aligned} BE_y &= EG_{PJ,y} \times EF_{grid,CM,y} \\ &= 556,508.83 * 0.9420 \\ &= 524,227 \text{ tCO}_2\text{e (round down value)} \end{aligned}$$

Project activity emissions (PE_y)

As there are no emissions due to the implementation of the project, the project emissions are zero.

Leakage (LE_y)

As per ACM0002 Version 20, no leakage emissions is to be considered.

Thus,

$$\begin{aligned} ER_y &= BE_y - PE_y \\ ER_y &= BE_y - 0 \\ ER_y &= BE_y \end{aligned}$$

Therefore,

$$ER_y = BE_y = 524,227 \text{ tCO}_2\text{e}$$

For SDG 8

During the current monitoring period, employment opportunities were created for 40 persons and total 8 trainings were conducted.

E.2. Calculation of project value or estimation of project situation of each SDG outcome

524,227 tCO₂e (for SDG 13)
556,508.83 MWh (for SDG 7)
8 trainings were provided and 40 people are employed (for SDG 8)

E.3. Calculation of net benefits as difference of baseline and project values or direct calculation for each SDG outcome

No	1
Indicator	8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities
Mitigation measure	N.A.
Chosen parameter	No. of staff employed in the project activity

Current situation of parameter		Employment has been generated during the current monitoring period, which can be checked from the employee record and the salary slips provided. During the current monitoring period, 40 people are employed due to project activity.
Estimation of baseline situation of parameter		N.A.
Future target for parameter		Hiring of skilled and unskilled personnel in the plant and providing specific trainings to them
Way of monitoring	How	Employee rolls, pay-slips, attendance registers, etc.
	When	Annually
	By who	Monitored by the project owner

No		2
Indicator		8.6.1 Proportion of youth (aged 15-24 years) not in education, employment or training
Mitigation measure		N.A.
Chosen parameter		Training of Staff
Current situation of parameter		Training has been given to employees for skilled as well as unskilled jobs during the current monitoring period, which can be checked from the training records provided. During the current monitoring period, 8 trainings were conducted.
Estimation of baseline situation of parameter		N.A.
Future target for parameter		Hiring of skilled and unskilled personnel in the plant and providing specific trainings to them
Way of monitoring	How	Training records, attendance registers, etc.
	When	Annually
	By who	Monitored by the project owner

No		3
Indicator		7.2.1 Renewable energy share in the total final energy consumption
Mitigation measure		N.A.
Chosen parameter		Net energy generation by power plant
Current situation of parameter		The net electricity generation during this monitoring period is 556,508.83 MWh, which is lower than the estimated.
Estimation of baseline situation of parameter		N.A.
Future target for parameter		The future target for parameter is that the annual net electricity generation will be 858,725 MWh/year.
Way of monitoring	How	Interviews with the local inhabitants near the project sites about change in power generation and quality of electricity supplied
	When	Ongoing, monitored at least annually
	By who	Monitored by the project owner

No		4
Indicator		SDG 13
Mitigation measure		N.A.
Chosen parameter		Emission reductions achieved per year
Current situation of parameter		The net emission reductions resulted during this monitoring period is 524,227 tCO ₂ e, which is lower than the estimated.
Estimation of baseline situation of parameter		N.A.
Future target for parameter		The future target for parameter is that the annual emission reductions should be 808,833 tCO ₂ e/year.
Way of monitoring	How	Interviews with the local inhabitants near the project sites about change in power generation and quality of electricity supplied

	When	Ongoing, monitored at least annually
	By who	Monitored by the project owner

E.4. Summary of ex-post values of each SDG outcome for the current monitoring period

Item	Baseline estimate	Project estimate	Net benefit
SDG 7: Affordable and Clean Energy	-	556,508.83 MWh	556,508.83 MWh
SDG 8: Decent Work and Economic Growth	-	No. of employment opportunities created: 40 No. of trainings given: 8	No. of employment opportunities created: 40 No. of trainings given: 8
SDG 13: Climate Action	524,227 tCO ₂ e	-	524,227 tCO ₂ e

E.5. Comparison of actual value of outcomes with estimates in approved PDD

Item	Values estimated in ex ante calculation of approved PDD	Actual values achieved during this monitoring period												
SDG 7: Affordable and Clean Energy	858,725 MWh	556,508.83 MWh												
SDG 8: Decent Work and Economic Growth	1 training/annum and 10 people employed	No. of employment opportunities created: 40 Further below is the breakup of employment generated during the monitoring period <table><tr><th>Year</th><th>Skilled</th><th>Unskilled</th><th>Total</th></tr><tr><td>2019</td><td>20</td><td>2</td><td>22</td></tr><tr><td>2020</td><td>16</td><td>2</td><td>18</td></tr></table> No. of trainings given: 8	Year	Skilled	Unskilled	Total	2019	20	2	22	2020	16	2	18
Year	Skilled	Unskilled	Total											
2019	20	2	22											
2020	16	2	18											
SDG 13: Climate Action	808,833 tCO ₂ e	524,227 tCO₂e The vintage wise breakup of Emission Reductions obtained during the monitoring period <table><tr><th>Year</th><th>Emission Reductions achieved</th></tr><tr><td>2019</td><td>196,409 tCO₂e</td></tr><tr><td>2020</td><td>327,818 tCO₂e</td></tr></table>	Year	Emission Reductions achieved	2019	196,409 tCO ₂ e	2020	327,818 tCO ₂ e						
Year	Emission Reductions achieved													
2019	196,409 tCO ₂ e													
2020	327,818 tCO ₂ e													

E.6. Remarks on difference from estimated value in approved PDD

The emission reductions as per the registered PDD for the current monitoring period is estimated to be 824,344 tCO₂e. Whereas, during the current monitoring period, the emission reductions claimed are 524,227 tCO₂e, which is approximately 36% lower than the estimated emission reductions for the current monitoring period.

During the present monitoring period, the project witnessed a decrease of 36% in emission reductions as compared to ex-ante emissions. This is mainly due to environmental conditions and is not in control of PP.

SECTION F. Stakeholder inputs and legal disputes

F.1. List all inputs/grievances which have been received for the project during the monitoring period together with their respective answers/actions

As a part of continuous feedback from local stakeholders, a grievance register is placed at the site office and is being continuously monitored and the feedbacks if found genuine, are addressed through the grievance cell on regular basis.

During the current monitoring period, no comments/feedbacks were received from the local stakeholders.

F.2. List all inputs/grievances from previous monitoring period where follow up action is to be verified in this monitoring period

Not Applicable

F.3. Provide details of any legal contest or dispute that has arisen with the project during the monitoring period

Not Applicable

Annexure 1: Calibration Details

Meter Sl. No.	Make	Class	Calibration date	Due date for Calibration
05296024 (Main Meter)	Elster	0.2 s	17/06/2019	16/06/2024
05296026 (Check Meter)	Elster	0.2 s	17/06/2019	16/06/2024