Gold Standard for the Global Goals

TEMPLATE

MONITORING REPORT

PUBLICATION DATE **14.10.2020**

VERSION **v. 1.1**

RELATED SUPPORT **- TEMPLATE GUIDE Monitoring Report v. 1.1**

This document contains the following Sections

KEY PROJECT INFORMATION

Key Project Information

GS ID (s) of Project (s)	GS7468
Title of the project (s) covered by monitoring report	300 MW Wind Energy Project by Green Infra Wind Energy Limited
Version number of the PDD/VPA-DD (s) applicable to this monitoring report	02
Version number of the monitoring report	02
Completion date of the monitoring report	10/09/2022
Date of project design certification	09/11/2020
Date of Last Annual Report	NA as the previous verification happened without delays
Monitoring period number	03
Duration of this monitoring period	01/08/2021 to 31/07/2022(Both days included)
Project Representative	Green Infra Wind Energy Limited
Host Country	India
Activity Requirements applied	☐ Community Services Activities ☒ Renewable Energy Activities ☐ Land Use and Forestry Activities/Risks & Capacities ☐ N/A
Methodology (ies) applied and version number	ACM0002- Grid-connected electricity generation from renewable sources – Version 20
Product Requirements applied	☒ GHG Emissions Reduction & Sequestration ☐ Renewable Energy Label ☐ N/A

Table 1 - Sustainable Development Contributions Achieved

Sustainable Development Goals Targeted	SDG Impact	Amount Achieved	Units/ Products
SDG 7: Affordable and Clean Energy	MWh of renewable energy generated	**725,118.60**	MWh

SDG 8.5.1: Average hourly earnings of female and male employees, by occupation, age and persons with disabilities	Employees Income (INR)	**73 -(To refer Monitoring parameter section D.2)**	Nos -
SDG 8.6.1: Proportion of youth (aged 15-24 years) not in education, employment or training	Training imparted	**87**	Nos
SDG 13: climate action	GHG emission reduction	**682,989**	VERs(tCO_2e)

Table 2 – Product Vintages

Start Dates	End Dates	Amount Achieved (VERs)
01/08/2021	31/12/2021	**219,101**
01/01/2022	31/07/2022	**463,888**

SECTION A. DESCRIPTION OF PROJECT

A.1. 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 **682,989 t CO_2** for the present monitoring per year, thereby displacing **725,118.60** MWh 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 **300 MW; which involves operation of total 143 WTGs, in the state of Gujarat in India.**

Project Investor	Project Type	Capacity Commissioned (MW)	Date of Commissioning	State	Usage
Green Infra Wind Energy Limited	Wind	226.8 MW	73.5 MW commissioned on 06/07/2019	Gujarat	Sale to Grid
			50.4 MW commissioned on 07/09/2019		
			52.5 MW commissioned on 04/11/2019		
			50.4 MW commissioned on 04/01/2020		
		73.2 MW	73.2 MW commissioned on 20/06/2020		

The start date of the project activity **is 23/03/2018**, which is date of signing supply contract by Green infra– W i n d Energy Limited. After signing of contract, the project activity started the implementation and in different phases. The project activity is **connected to National grid of India**.

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 would be generated through sustainable means without causing any negative impact on the environment. In t**he 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.

A.2. Location of project

State: Gujarat

District: Kutch

Taluka: Mandvi and Nakhatrana

Site: Bhujpul

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

Latitude: 23.073644° N Longitude: 69.2662° E The geo coordinates of all the WTGs of the project activity has been provided in the table below

Sl. No.	Investor	WTG Location ID	Latitude	Longitude
1		Gadhsisa-New14	23° 07' 24.70"	69° 20' 24.28"
2		Devpar-03	23° 08' 19.97"	69° 18' 25.39"
3		Devpar-02	23° 09' 09.46"	69° 18' 45.69"
4		Gadhsisa- New23	23° 04' 29.59"	69° 21' 36.03"
5		Gadhsisa-013	23° 04' 16.78"	69° 19' 19.84"
6		Gadhsisa-008	23° 04' 58.75"	69° 20' 09.96"

7	**Green Infra Wind Energy Limited**	Gadhsisa-New12	23° 05' 55.87"	69° 19' 17.97"
8		Ashrani-02	23° 04' 27.16"	69° 22' 27.83"
9		Ashrani-03	23° 03' 23.45"	69° 21' 59.68"
10		Maunani-01N3	23° 06' 03.26"	69° 18' 07.32"
11		Gadhsisa-New15	23° 06' 54.81"	69° 20' 55.53"
12		Rajapr-11	23° 04' 33.34"	69° 23' 34.59"
13		Rajpar-14N1	23° 04' 21.01"	69° 23' 09.04"
14		Vadasar-New62	23° 08' 20.03"	69° 25' 50.32"
15		Rajapr-13	23° 04' 08.32"	69° 23' 13.27"
16		Gadhsisa-New16	23° 04' 44.81"	69° 21' 47.85"
17		Vadasar-New63	23° 08' 37.76"	69° 25' 49.70"
18		Gadhsisa-10	23° 04' 09.11"	69° 21' 17.70"
19		Gadhsisa-NEW20	23° 05' 13.21"	69° 21' 01.49"
20		Maunani-08	23° 04' 11.36"	69° 17' 47.50"
21		Maumoti-03	23° 05' 40.90"	69° 16' 11.24"
22		Gadhsisa-9	23° 04' 37. 25"	69° 20' 27.58"
23		Maunani-04	23° 04' 00.59"	69° 18' 10.25"
24		Mounani-06	23° 03' 57.35"	69° 17' 44.69"
25		Vadasar-64	23° 07' 37.50"	69° 26' 38.46"
26		Moumoti-04	23° 05' 21.45"	69° 16' 34.75"
27		Mounani-09	23° 04' 06.69"	69° 18' 44.63"
28		Moumoti-02	23° 05' 10.34"	69° 15' 49.21"
29		Mounani-03	23° 05' 58.79"	69° 18' 46.65"
30		Jamthada-06	23° 06' 39.21"	69° 25' 19.55"
31		Jamthada-04	23° 07' 19.16"	69° 25' 13.24"
32		Gadshisa-New07	23° 05' 00.18"	69° 19' 23.35"
33		Gadshisa-New08	23° 05' 21.15"	69° 19' 28.78"
34		Jamtada-01	23° 06' 52.89"	69° 24' 35.22"
35		Rat-05N1	23° 00' 34.38"	69° 15' 02.96"
36		Devpur-01	23° 08' 30.33"	69° 18' 15.28"
37		Gadshisa-01	23° 06' 10.85"	69° 19' 21.83"
38		Gadshisa-06	23° 04' 42.76"	69° 19' 33.22"
39		Sherdi PR-02	23° 01' 47.95"	69° 22' 22.40"
40		Ratadaya PR-15	22° 59' 51.12"	69° 15' 09.84"
41		Ratadaya PR-50	22° 58' 42.02"	69° 16' 06.12"
42		Sanyara PR-04	23° 16' 30.05"	69° 20' 52.87"
43		Sherdi PR-10	23° 02' 05.58"	69° 19' 55.05"
44		Rat PR-11	23° 00' 04.89"	69° 16' 02.80"
45		Rat PR-54	22° 58' 15.87"	69° 15' 47.24"
46		Rat PR-57	22° 59' 06.03"	69° 14' 57.01"
47		Morjar PR-01	23° 20' 29.49"	69° 22' 31.99"
48		Nagrecha PR-06	23° 01' 52.25"	69° 12' 14.91"
49		Gandhigram PR-01	23° 00' 00.69"	69° 18' 07.15"
50		Sherdi PR-21	23° 01' 18.77"	69° 19' 31.85"
51		Manjhal PR-37	23° 02' 10.02"	69° 18' 45.67"
52		Morjar PR-06	23° 19' 41.61"	69° 22' 09.74"

53		Morjar PR-04	23° 20' 08.43"	69° 22' 13.16"
54		Sherdi PR-20	23° 02' 26.01"	69° 22' 06.59"
55		Manjha PR-03	23° 02' 31.35"	69° 18' 45.89"
56		Rat PR-67	22° 59' 30.98"	69° 15' 14.30"
57		Vadhva Kaya PR-30	23° 09' 05.50"	69° 21' 15.28"
58		Rat PR-52	22° 58' 55.70"	69° 15' 31.30"
59		Rat PR-43	22° 58' 31.25"	69° 14' 48.09"
60		Rat PR-58	22° 58' 14.25"	69° 15' 06.08"
61		Bhadai PR-06	22° 59' 57.60"	69° 22' 13.70"
62		Morjar PR-245	23° 19' 58.18"	69° 22' 42.89"
63		Tharavada PR-293	23° 20' 42.27"	69° 25' 14.88"
64		Morjar Pr-281	23° 19' 23.60"	69° 22' 59.77"
65		Akhadana PR-14	23° 21' 53.68"	69° 25' 39.12"
66		Rat PR-177	22° 58' 51.82"	69° 14' 56.31"
67		Undoth PR- 672	22° 59' 44.41"	69° 11' 49.22"
68		Bhojay PR -63	23° 01' 18.62"	69° 10' 55.53"
69		VamrapadarPR-20	23° 21' 52.57"	69° 23' 38.76"
70		Chavadka PR-357	23° 20' 50.24"	69° 22' 40.89"
71		VamrapadarPR-81	23° 21' 02.63"	69° 23' 06.88"
72		Morjar PR-382	23° 18' 18.04"	69° 22' 33.17"
73		Vadvakaya PR-99	23° 09' 16.13"	69° 21' 56.45"
74		Morjar PR-266	23° 19' 21.04"	69° 22' 30.85"
75		Morjar PR-375	23° 18' 38.57"	69° 22' 42.67"
76		Vadvakaya-18	23° 09' 24.76"	69° 22' 21.97"
77		Vadvakaya-24	23° 08' 55.22"	69° 19' 31.69"
78		Naranpar Mosana-12	23° 15' 51.40"	69° 16' 01.48"
79		Naranpar Mosana-20	23° 14' 23.25"	69° 15' 42.27"
80		Kotada Tharavada PR-	23° 22' 06.23"	69° 24' 51.08"
81		Naranpar Mosana-11	23° 16' 21.75"	69° 16' 18.37"
82		Vadvakaya-25	23° 09' 05.65"	69° 21' 47.46"
83		Chavadka PR-366	23° 21' 01.64"	69° 22' 22.15"
84		Naranpar Mosana-04	23° 14' 35.85"	69° 14' 25.75"
85		Naranpar Mosana-06	23° 15' 31.76"	69° 14' 43.38"
86		Naranpar Mosana-01	23° 13' 57.50"	69° 15' 16.95"
87		Sangnarar-06	23° 17' 31.84"	69° 15' 10.46"
88		Vamrapadar PR-100	23° 21' 31.54"	69° 23' 45.46"
89		Laxmipar PR-175	23° 15' 55.29"	69° 24' 15.02"
90		Laxmipar PR-86	23° 15' 29.65"	69° 24' 10.40"
91		Tharavada PR-235	23° 21' 17.96"	69° 24' 31.60"
92		Morjar PR-296	23° 19' 06.75"	69° 22' 20.14"
93		Bhadli PR-363	23° 19' 55.62"	69° 25' 59.95"
94		Laxmipar PR -251	23° 16' 33.19"	69° 23' 56.94"
95		Sherdi PR-344	23° 00' 43.56"	69° 19' 28.47"
96		Vamrapadar PR-125	23° 21' 32.37"	69° 23' 03.41"
97		Bhadli PR-155	23° 19' 26.95"	69° 23' 40.66"
98		Bhadli PR-602	23° 18' 53.30"	69° 25' 53.26"

99		Tharavada PR-258	23° 21' 13.11"	69° 24' 58.46"
100		Tharavada PR-331	23° 20' 47.27"	69° 24' 30.48"
101		Vadvakaya New-04	23° 09' 18.08"	69° 19' 46.62"
102		Bhadli PR-521	23° 18' 28.06"	69° 26' 42.44"
103		Bhadli PR-514	23° 18' 44.16"	69° 26' 51.26"
104		Biddapadar-01	23° 08' 39.50"	69° 26' 40.67"
105		Bhadai PR-141	23° 00' 17.30"	69° 21' 35.68"
106		Bhadli PR-28	23° 18' 24.58"	69° 25' 41.69"
107		Vamrpadar PR-34	23° 21' 50.88"	69° 24' 03.80"
108		Morjar PR-417	23° 18' 29.21"	69° 22' 15.74"
109		Chavdaka PR-141	23° 21' 41.40"	69° 21' 56.69"
110		Chavadka PR-448	23° 20' 42.63"	69° 21' 19.55"
111		chavadka PR-119	23° 21' 58.08"	69° 22' 26.43"
112		Chavdaka PR-77	23° 22' 00.25"	69° 21' 36.10"
113		Chavdaka PR-85	23° 22' 07.23"	69° 22' 07.51"
114		Lakhiyavera PR-259	23° 23' 17.06"	69° 20' 20.50"
115		Jinday PR-204	23° 21' 45.70"	69° 19' 57.83"
116		Gadsisha New-10	23° 05' 35.15"	69° 19' 19.11"
117		Chavadka PR-99	23° 23' 21.05"	69° 23' 14.68"
118		Vadvakaya PR-209	23° 08' 39.79"	69° 19' 39.95"
119		Lakhiyavera PR-99	23° 22' 07.29"	69° 20' 56.64"
120		Vadvakaya New-08	23° 09' 40.30"	69° 20' 14.91"
121		Chavadka PR-486	23° 20' 13.94"	69° 20' 53.35"
122		Lakhiyaveera PR-359	23° 23' 40.02"	69° 22' 00.82"
123		Jinday PR-81	23° 21' 22.54"	69° 18' 42.36"
124		Sangnarar-01	23° 16' 52.37"	69° 14' 47.36"
125		Morgar PR-110	23° 14' 41.68"	69° 20' 47.34"
126		Olangiya PR-101	23° 14' 54.25"	69° 14' 09.35"
127		Ranara PR-16	23° 17' 25.58"	69° 24' 08.85"
128		Jinday PR-38	23° 21' 32.94"	69° 19' 18.24"
129		Bhadai PR-10	22° 59' 03.86"	69° 22' 10.01"
130		Chavadka PR-459	23° 20' 18.50"	69° 21' 34.84"
131		Chavadka PR-526	23° 20' 40.62"	69° 20' 35.07"
132		Vadvakaya New-06	23° 09' 56.20"	69° 20' 13.34"
133		Olangiya PR-71	23° 15' 36.54"	69° 14' 03.44"
134		Vadvakaya New-13	23° 10' 20.08"	69° 21' 10.13"
135		Lakhiyaveera PR-303	23° 23' 34.62"	69° 20' 49.43"
136		Chavadka PR-307	23° 20' 59.15"	69° 21' 06.53"
137		Jinday PR-179	23° 22' 04.99"	69° 20' 09.08"
138		Roha PR-236	23° 12' 57.20"	69° 15' 23.17"
139		Vibhapar PR-223	23° 13' 32.56"	69° 18' 32.58"
140		Rampar PR-206	23° 16' 11.64"	69° 13' 51.81"
141		Jinday PR-108	23° 21' 03.54"	69° 19' 05.32"
142		Rampar PR-164	23° 16' 52.25"	69° 14' 15.96"
143		Rampar PR-107	23° 17’ 07.23”	69° 14’ 22.01”

A.3. Reference of applied methodology

Methodology: ACM0002: Grid-connected electricity generation from renewable sources - Version 20.0 (EB 105, Annex 3)

Type I: Energy industries (renewable/non-renewable sources)

Reference tools:

Methodological Tool: Tool to calculate the emission factor for an electricity system - Version 07.0

Methodological Tool: Tool for the demonstration and assessment of additionality - Version 07.0.0, EB 70 Annex 84

A.4. Crediting period of project

Crediting period Start date	06/07/2019 (The project was commissioned on 06/07/2019, the start date of crediting period has been taken since then.)
Crediting Period	06/07/2019 to 05/07/2024
Duration	5 years
Type	Renewable

SECTION B. IMPLEMENTATION OF PROJECT

B.1. Description of implemented project

The total installed capacity of the current project activity is 300 MW; which involves operation of WTGs in the state of Gujarat in India. The project activity replaces anthropogenic emissions of greenhouse gases estimated to be approximately 1,004,977 tCO2e per year, thereon displacing 1,066,968 **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 entire project is commissioned and operational.

The start date of the project activity is **23/03/2018, which is date of signing supply contract by Green Infra Wind Energy Limited**. After signing of contract, the project

activity started the implementation and in different phases. The project activity is connected to National grid of India.

The total installed capacity of the project is **300 MW**, which comprises of total **143 number of Wind Turbine Generator (WTG)**. The WTGs used in the project activity are from Siemens Gamesa

Particulars	**Details**
WTG Make and Model No.	SG 2.1-114
Generator Type & Rating	Doubly-Fed Induction generator, 2100 kW
WTG configuration	2100 kW
Rotor Diameter	114 m
Swept Area	10,207 m^2

Technology Transfer

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

The project activity is a Voluntary initiative by the PP and is contributing to the SDG goals set forth by GS as detailed below:

- **SDG 7** – Affordable and Clean Energy (Contribution to Climate Security & Sustainable Development)– **725,118.60 MWh/year**
- **SDG 8** – Decent Work and Economic Growth–**87 training/annum** and 73 people employed and people are getting better salary as compared to local level due to implementation of the project activity
- **SDG 13** – Climate Action–**682,989 tCO2e/annum**
- species

B.1.1 Forward Action Requests

This is 3rd periodic verification for the project activity and No FAR is raised during performance review, However, 2 FARs were raised from previous verification by previous VVB. The FARs are as follows-

FAR-1

Point #1: As per PDD, the nearest residential area is 2 km away. When resuming the on-site visit after Covid-19 situation eases shall confirm the same and assess if there are any residential spots which may be affected by noise and shadow flickering effect from the project activity.

Point #2: When resuming the on-site visit after Covid-19 situation eases shall Interview a sample group of residents and employees, considering the large area covered project activity and proportionate affects.
Point #3: When resuming the on-site visit after Covid-19 situation eases, VVB shall Interview residents on the rehabilitation works regarding roads and landscape, if any damages occurred during construction.
Point #4: Monitoring procedures and measurement methods and procedures shall be verified during next verification for SDG 15
FAR-2
The VVB shall conduct site visit and confirm physical implementation of the project activity and technical features of the WTGs and monitoring system and meters.

The VVB shall conduct interviews with plant staff and local stakeholders to confirm the grievances, Safeguarding Principles, trainings and SDG monitoring parameters.

This FARs are addressed during current monitoring period and site visit has been conducted.

B.2. Post-Design Certification changes

B.2.1. Temporary deviations from the approved Monitoring & Reporting Plan, methodology or standardized baseline

There is no deviation in the monitoring and reporting plan, methodology and standardized baseline

B.2.2. Corrections

No corrections in the present monitoring report

B.2.3. Changes to start date of crediting period

There is no change in the start date of the project activity

B.2.4. Permanent changes from the Design Certified monitoring plan, applied methodology or applied standardized baseline

No permanent changes

B.2.5. Changes to project design of approved project

Not applicable

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 needs to be measured. The net energy supplied to grid by the project activity multiplied by emission factor for Indian grid, would form the baseline for the project activity.

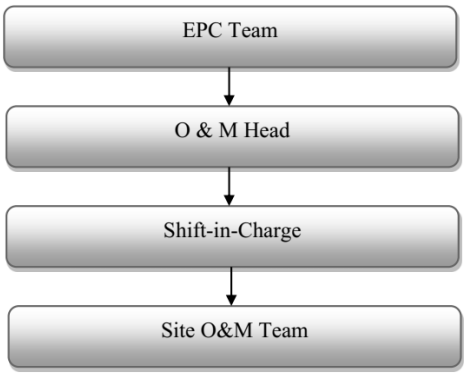
Since the baseline emission factor is based on an ex-ante determination, monitoring of this parameter is not required. The sole parameter for monitoring is the net electricity exported to the grid.

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, implemented by the project proponent describes about the monitoring organization, 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. The following structure for data monitoring, collection, data archiving and calibration of equipment 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 and 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 log book 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 WRLDC (Western Regional Power Committee). Neither the project proponent nor the site personnel have any control over it. The records will be cross-checked through online. The meters are calibrated by WRLDC at-least once in five years.

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

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

Emergency preparedness: There is no unidentified activity that can result in substantial emissions from the project activity. No need for emergency preparedness in data monitoring is visualized. In case, the main meter, which is 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. The following events had not happened for the project activity in the present monitoring period.

Training and maintenance requirements: Each and every 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

Relevant SDG Indicator	**SDG 13**
Data/parameter:	EF grid, OM ,y
Unit	tCO2/MWh
Description	Operating Margin CO2 emission factor in year y
Source of data	Calculated from CEA database, Version 15, December 2019
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 "CO2 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	tCO2/MWh
Description	Build Margin CO2 emission factor in year y
Source of data	Calculated from CEA database, Version 15, December 20198
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 "CO2 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	tCO2/MWh
Description	Combined Margin CO2 emission factor in year y
Source of data	Calculated from CEA database, Version 15, December 2019[9]
Value(s) applied)	**0.9419**
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 (t CO2/MWh)** **$EF_{grid,OM,y}$= Operating margin CO2 emission factor in year y (t CO2/MWh)** **W_{OM}** = Weighting of operating margin emissions factor (%) = 75% **W_{BM}**= Weighting of build margin emissions factor (%) = 25% in year y (tCO2/MWh) **EFgrid,OM,y**= Operating margin CO2 emission factor in year y (tCO2/MWh) **WOM** = Weighting of operating margin emissions factor (%) = 75% **WBM**= Weighting of build margin emissions factor
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:	**$EG_{PJ,y}$**
Unit	MWh

<table>
<tr><td>Description</td><td>Quantity of net electricity generation supplied by the project plant/unit to the grid in year y in MWh</td></tr>
<tr><td>Measured/calculated/default</td><td>Calculated</td></tr>
<tr><td>Source of data</td><td>Regional Energy Account (REA) statement issued monthly by WRPC.</td></tr>
<tr><td>Value(s) of monitored parameter</td><td><table><tr><td>Vintage 1(MWh)</td><td>232615.70</td></tr><tr><td>Vintage 2 (MWh)</td><td>492502.90</td></tr><tr><td>(Total)MWh</td><td>725,118.60</td></tr></table></td></tr>
<tr><td>Monitoring equipment</td><td>Main meter and check meter</td></tr>
<tr><td>Measuring/reading/recording frequency:</td><td>Continuous measurement & monthly recording</td></tr>
<tr><td>Calculation method (if applicable):</td><td>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 cross-checked from the monthly Invoices raised by the PP. For ER calculations, the values of Actual power have been considered.

The REA statements cannot be crosschecked with the monthly Invoices because, the Invoices are raised as per the scheduled generation. The WRPC is a credible government body, and the REA statement is publically available at the website of WRPC, which can be referred from http://wrpc.gov.in/.</td></tr>
</table>

<table>
<tr><td>QA/QC procedures:</td><td>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 the
<table>
<tr><th>Meter Sl. No.</th><th>Make</th><th>Class</th><th>Calibration date</th><th>Due date for Calibration</th></tr>
<tr><td>05296052 (Main Meter)</td><td>Elster</td><td>0.2 s</td><td>05/07/2019</td><td>04/07/2024</td></tr>
<tr><td>05296053 (Check Meter)</td><td>Elster</td><td>0.2 s</td><td>05/07/2019</td><td>04/07/2024</td></tr>
</table>
</td></tr>
<tr><td>Purpose of data:</td><td>To Monitor the SDG 7 Indicator</td></tr>
<tr><td>Additional comments:</td><td>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, whichever occurs later.</td></tr>
</table>

Relevant SDG Indicator	**SDG13**
Data/parameter:	**ER_y**
Unit	t CO2e
Description	Emission reductions achieved per year
Measured/calculated/default	Calculated
Source of data	As per actual ER sheet.
Value(s) of monitored parameter	**682,989**
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 better salary**
Unit	Number and Rupees
Description	Number of people employed directly due to the project activity and better salary given and salary from the o/m contract
Measured/calculated/default	-
Source of data	Plant records, Salary Slips and employee 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	Total employment for present monitoring period is 73, **For the First three years, the amount need not be paid as per the O and M contract, submitted during validation.** **No Woman employee/disabled working on site**. On site, woman is not employed as a skilled labor to maintain WTG operation (as it is physically challenging) nor as a watchman(Unskilled). They likely to be given opportunity to work in plant office for cleaning/cooking purpose or any date entry purpose if required, depending upon the requirement and positive response received from the woman community of the project area. **No of employees working for the project activity-73(Source Self declaration from the Client and).** **No of Employees from O and M Team-69 no's (Employment list and June 2022 attendance record)** **No of permanent employees-4 nos. (Appointment order of 1 employee is submitted during validation, but cost is not me ntioned publicly as per company's HR policy**
Monitoring equipment	-
Measuring/reading/recording frequency:	Monthly monitoring and annual compilation
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 monitors 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. Also it is ensued that peoples will get equal payment for equal work. The payment will be based on work and no any gender inequality for payment for work of equal value". Further, for all kind of jobs local people would be given preference based upon their competency level.
QA/QC procedures:	The number of persons employed is mentioned in the plant register, which can be cross checked with attendance register. Average hourly earnings of the employees/workers can be checked and calculated from the salary slips.

Purpose of data:	To Monitor the SDG 8 Indicator
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, whichever occurs later.

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: 87 no's for the present monitoring period from 1 st Aug 2021-31 st July 2022(training details Attached in appendix2)
Monitoring equipment	-
Measuring/reading/recording frequency:	**Annual recording**
Calculation method (if applicable):	Together with the technology supplier, the Project organize 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:	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, whichever occurs later.

Relevant SDG Indicator	**4.3.1 Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, by sex**
Data/parameter:	**Support for child education**
Unit	-
Description	List of supports for child education
Measured/calculated/default	-
Source of data	Documentary evidence like records, photographs, etc.
Value(s) of monitored parameter	120 students supported via programmes organized for - Library books donation, plantation drive and Environmental awareness programme in a school named **Saraswati Vidya Mandir**. Images and photographs are given in appendix I.
Monitoring equipment	-
Measuring/reading/recording frequency:	**Annual and indirect benefits and not included in table 1 summary of SDGs. Monitoring is done as mentioned in the registered PDD**
Calculation method (if applicable):	-.
QA/QC procedures:	-
Purpose of data:	To Monitor the SDG 8 Indicator
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, whichever occurs later.

Relevant SDG Indicator	**15.5.1 Red List Index**

Data/parameter:	**No. of threatened/endangered species conserved/protected**
Unit	-
Description	Protection/conservation of endangered species
Measured/calculated/default	-
Source of data	Documentary evidence like records, photographs etc.
Value(s) of monitored parameter	0
Monitoring equipment	-
Measuring/reading/recording frequency:	Annual and not mentioned in Table 1 but monitored as per registered PDD
Calculation method (if applicable):	-
QA/QC procedures:	-
Purpose of data:	To Monitor the SDG 15 Indicator
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, whichever occurs later.

D.3. Comparison of monitored parameters with last monitoring period

Not required as the project is not community-based activity

D.4. Implementation of sampling plan

No sampling involved in the project activity

SECTION E. CALCULATION OF SDG IMPACTS

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

In the baseline, there were no Social Development activities taking place; whereas baseline Emissions for electricity supplied by project activity,

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

BE $_y$=725,118.60*0.9419=**682,989 t CO2e**

Where:

BE_y = Baseline emissions in year *y* (t CO_2/yr)

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

$EF_{grid,CM,y}$ = Combined margin CO_2 emission factor for grid connected power generation in year *y* calculated using the latest version of "TOOL07: Tool to calculate the emission factor for an electricity system" (t CO_2/MWh)

Item	Value
SDG 7: Affordable and Clean Energy	**725,118.60**
SDG 8: Decent Work and Economic Growth	**0**
SDG 13: Climate Action Emission	**682,989**

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

Item	Baseline Estimate	Value

SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all	**Method:** Monitored through energy meter. Net electricity will be calculated by DISCOM and O&M operator on monthly basis and provided in the share certificate **Frequency:** Monthly QA/QC procedures: The meter(s) shall be calibrated once every 5 years. **Purpose:** To measure the electricity produced and supplied to the grid SDG.	725,118.60 MWh
SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	**Method:** Ongoing data collection and storage under HSE records **Frequency:** Annually QA/QC procedures: Transparent data collection, analysis and reporting. **Purpose:** To identify and record the number of trainings provided to the employees as well as employment generated due to project activity.	87 Trainings 73 Employees
SDG 13: Take urgent action to combat climate change and its impact	**Method**: Using processes and equations provided under "Tool to calculate the emission factor for an electricity system", referencing data from CEA database, Version 15, December 2019.	682,989 tCO_2 of emission reduction

	Frequency: Every monitoring period QA/QC procedure: Transparent data collection, analysis, calculation and reporting. **Purpose:** To calculate emissions avoided due to the project activity	

E.3. Calculation of leakage

There is no leakage involved in the project monitoring period as per the methodology ACM0002, Version 20.

E.4. Calculation of net benefits or direct calculation for each SDG Impact

SDG	SDG Impact	Baseline estimate	Project estimate	Net benefit
7	MWh of renewable energy generated	0	725,118.60	725,118.60
8	Decent Work and Economic Growth	0	87Trainings 73 Employees -	87 Trainings 73 Employees -
13	Emission Reduction	682,989	0	682,989

E.5. Comparison of actual SDG Impacts with estimates in approved PDD

SDG	Values estimated in ex ante calculation of approved PDD for this monitoring period	Actual values[1] achieved during this monitoring period
7	1,066,968(MWh)	725,118.60

[1] Whenever emission reductions are capped, both the original and capped values used for calculations must be transparently reported. Use brackets to denote original values.

8.5.1	10 nos	**73 nos**
8.6.1	1 training per year	87 trainings
13	1,004,977 tCO_2e	682,989 tCO_2e

E.5.1. Explanation of calculation of value estimated ex ante calculation of approved PDD for this monitoring period

The emission reduction obtained for approved monitoring period is

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

Where: BE_y = Baseline emissions in year y (tCO2)

$EG_{PJ,\,y}$ = Quantity of net electricity generation supplied by the project plant/unit to the grid in year y in MWh

$EF_{grid,\,CM,\,y}$ = Combined margin CO2 emission factor for grid connected power generation in year y

BE_y = 1,066,968 MWh/annum x 0.9419 tCO2/MWh = 1,004,977 tCO2e/annum

The actual emission reductions are 682,989 tCO2/Annum. The estimated emission reduction from the registered PDD is 1,004,977 tCO2/Annum. There is **32.04 %** reduction in Emission reductions when compared to the registered PDD.

E.6. Remarks on increase in achieved SDG Impacts from estimated value in approved PDD

The actual emission reduction is lesser than the registered PDD, due to the net electricity export to the grid. The electricity generation from the wind turbine vary significantly depending upon the characteristics of wind availability and other technical parameters like Plant load factor and other distribution losses. Hence the obtained value is less than the registered PDD.

SECTION F. SAFEGUARDS REPORTING

Not required as per registered PDD

SECTION G. STAKEHOLDER INPUTS AND LEGAL DISPUTES

G.1. List all Inputs and Grievances which have been received via the Continuous Input and Grievance Mechanism together with their respective responses/mitigations.

The Grievance is recorded through grievance register in the site office and continuous monitoring will be done by the grievance cell if anything is present. As a part of continuous feedback from stakeholders, During the current verification period, no feedback/suggestions were received.

G.2. Report on any stakeholder mitigations that were agreed to be monitored.

Not applicable

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

Not applicable

Appendix 1

CSR Activites

Awareness on Environment at School

sembcorp

Donated 15 Books to Local Library

sembcorp

Appendix 2

Training details	Nos	
March 2022	1 1 7 2 4 2 3	• Awareness on stress management • Awareness training PTW • Lifesaving rules • Stress management • Plastic use • Vehicle inspection • Behavior based safety
April 2022	1 7 7 6 1	• Awareness training PTW • Awareness training hot works • Awareness training fire safety • HSE

	2 1 2	• Communications plastics • Safety working in feeders • Confined space • PTW and LTO
May 2022	1 1 2 4 4 11 1	• Awareness training-PTW • Training on confined space working • Heat stroke • awareness training • 6S • PTW training on error rectification • PSS(Manual material handling) • NM 20
June 2022	11 1 3 4 1 1 2 1 1	• Training on ERP awareness • Awareness training PTW • Awareness training unsafe act • PTW Authorisation training • Work at height • Manual material handling • Stress and mental health • Heat and electrical safety • First aid • Fire fight

Revision History

Version	Date	Remarks
1.1	14 October 2020	Hyperlinked section summary to enable quick access to key sections Improved clarity on Key Project Information Section for POA monitoring Forward action request section Improved Clarity on SDG contribution/SDG Impact term used throughout Clarity on safeguard reporting Clarity on design changes Leakage section added for VER/CER projects Addition of Comparison of monitored parameters with last monitoring period Provision of an accompanying Guide to help the user understand detailed rules and requirements
1.0	10 July 2017	Initial adoption