Gold Standard
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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)	GS4962
Title of the project (s) covered by monitoring report	Wind Power Project in Madhya Pradesh by OBWPPL
Version number of the PDD/VPA-DD (s) applicable to this monitoring report	05
Version number of the monitoring report	03
Completion date of the monitoring report	19/10/2021
Date of project design certification	04/06/2018
Date of Last Annual Report	02/07/2020
Monitoring period number	03
Duration of this monitoring period	01/08/2020 to 31/12/2020 (Both Days included)
Project Representative	Kosher Climate India Private 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 17.0
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	Renewable Electricity Generated	38,362	MWh
SDG 8	Trainings provided to O&M staff	15	Nos
SDG 8	Cost Spent on O&M	27.75	Million INR
SDG 8	Number of Jobs generated	61	Nos
SDG 13	Emission Reduction	37,506	tCO_2e

Table 2 – Product Vintages

		Amount Achieved				
Start Dates	End Dates	Electricity(MWh)	GSVER	No of Trainings (No)	O&M Staff (No)	O&M Cost spent (Mn INR)
01/08/2020	31/12/2020	38,362	37,506	15	61	27.75

SECTION A. DESCRIPTION OF PROJECT

A.1. General description of project

M/s Orange Bercha Wind Power Pvt. Ltd hassetup wind power project at villages around Bercha village, Ratlam District of Madhya Pradesh state, India with capacity of 50 MW (25 X 2 MW).

The purpose of the project activity is to generate electrical power using wind energy through operation of Wind Electric Generators (WEG's). The project consists of 25 Wind Turbine Generators (WTGs) of Gamesa G 97 turbines of 2 MW each. The electricity generated by the project is exported to the Indian national grid. The project activity will therefore displace an equivalent amount of carbon intense electricity which would have otherwise been generated by fossil fuel dominant electricity grid.

The project activity has been fully commissioned on 05/05/2016 and is operational.

The monitoring of SDG indicators have been carried out in accordance to respective registered PDD.

The project proponent has chosen the 1st crediting period from 05/05/2016to 04/05/2023.

The present monitoring period is from 01/08/2020 to 31/12/2020 through which emission reduction claimed is 37,506tCO2e.

A.2. Location of project

The project activity is located in the villages of Jhar, Sandala, Dhanesra, Kamed villages of Ratlam district, in the state of Madhya Pradesh, India. Details of co-ordinates of each WTGs are given below:

Sl.NO	WTG No	Latitude	Longitude	Tehsil/District	Village	State
1	B 16	52.2298	25.7294	Ratlam	Jhar	Madhya Pradesh
2	B 4	52.3946	25.7375	Ratlam	Sandala	Madhya Pradesh
3	B 1	52.1672	25.7515	Ratlam	Sandala	Madhya Pradesh
4	B 72	52.3437	25.7426	Ratlam	Jhar	Madhya Pradesh
5	B 90	52.5259	25.7525	Ratlam	Jhar	Madhya Pradesh
6	B 92	52.7864	25.7393	Ratlam	Jhar	Madhya Pradesh
7	B 89	52.5573	25.7325	Ratlam	Sandala	Madhya Pradesh
8	B 86	52.5976	25.7415	Ratlam	Sandala	Madhya Pradesh
9	B 73	52.8737	25.7434	Ratlam	Sandala	Madhya Pradesh
10	B 79	52.8032	25.7356	Ratlam	Sandala	Madhya Pradesh
11	B 38	52.5999	25.7551	Ratlam	Dhanesra	Madhya Pradesh
12	B 87	52.4506	25.7245	Ratlam	Dhanesra	Madhya Pradesh
13	B 80	52.608	25.737	Ratlam	Dhanesra	Madhya Pradesh
14	B 82	52.7876	25.7563	Ratlam	Dhanesra	Madhya Pradesh
15	B 91	52.608	25.737	Ratlam	Dhanesra	Madhya Pradesh
16	B 33	52.6708	25.7399	Ratlam	Dhanesra	Madhya Pradesh
17	B 71	52.8647	25.7629	Ratlam	Kamed	Madhya Pradesh
18	T1	52.7818	25.7614	Ratlam	Kamed	Madhya Pradesh
19	T2	52.7876	25.7563	Ratlam	Kamed	Madhya Pradesh
20	B 77	52.8648	25.7588	Ratlam	Kamed	Madhya Pradesh
21	B 83	52.8737	25.7434	Ratlam	Kamed	Madhya Pradesh
22	B 78	52.8747	25.7401	Ratlam	Kamed	Madhya Pradesh
23	B 85	52.8032	25.7356	Ratlam	Kamed	Madhya Pradesh
24	B 75	52.7864	25.7393	Ratlam	Kamed	Madhya Pradesh
25	B 84	52.735	25.7416	Ratlam	Kamed	Madhya Pradesh

A.3. Reference of applied methodology

Title: Consolidated baseline and monitoring methodology for "Grid-connected electricity generation from renewable sources"

References: Approved consolidated baseline methodology ACM0002 "Grid-connected electricity generation from renewable sources" (Version 17.0[1])
"Tool to calculate the emission factor for an electricity system" (tCO_2/MWh), version 6.0

A.4. Crediting period of project

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Type of Crediting Period: Renewable

Start date of the crediting period: 05/05/2016(Retroactive crediting start date)

Length of the current crediting period: 7 years

SECTION B. IMPLEMENTATION OF PROJECT

B.1. Description of implemented project

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The total installed capacity of the project activity is 50 MW comprising of 25 Nos of2Mw WTGs. The project has been commissioned as of 05/05/2016 and all the WTGs are currently operational. A total of all the 25 WTGs under the project activity were commissioned on the same day. There are no changes to the technical details of the project activity as mentioned in the registered PDD. Technical specification of the installed WTGS are same as mentioned during the commissioning of the project. The technical details of the WTGs are given below:

POWER	
Rated power	2000 kW
Average Annual Wind speed	7.5 m/s
Reference Turbulence Intensity	18 m/s
Reference 10 minute wind speed	37.5 m/s
Survival wind speed	52.5 m/s
GENERATOR	
Type	Doubly-fed with coil rotors and slip rings
Rated power	2 MW
Voltage	690 V AC
Frequency	50Hz/60 Hz
Protection class	IP 54 (slip ring IP 23)
Power Factor	0.95 CAP - 0.95 IND
ROTOR	
Diameter	97 m
Swept area	7390 sq.m

[1] https://cdm.unfccc.int/methodologies/DB/C505BVV9P8VSNNV3LTK1BP3OR24Y5L

Speed range	9:19 rpm
TOWER AND FOUNDATION	
Hub height	104 m
Type	Tubular, Four sections
Foundation type	Floating foundation
GEARBOX	
Type	1 Planetary stage & 2 helical stages
Gear Ratio	1:106.8 (50 Hz), 1:127.2 (60 Hz)

The details of WTGs and the feeders connected are mentioned below

Feeder	**WTGs**
Feeder 1	B-01, B-04, B-16, B-72, B-73, B-79, B-82, B-86, B-89, B-90, B-91, B-92
Feeder 2	B-33, B-38, B-71, B-75, B-77, B-78, B-80, B-83, B-84, B-85, B-87, T-01, T-02

B.1.1 Forward Action Requests

>>Following Forward action requests were raised during the previous monitoring period.

FAR #01: An annual report shall be submitted for each monitoring year by end of next calendar year for which verification is not completed. All the required information as stated in Annual Report shall be provided.

Project Proponent has submitted the annual report dated 02/07/2020 for the delayed verification period. Annual report submission is not required during the current monitoring period since this monitoring period is covered from 01/08/2020 to 31/12/2020.

FAR#02: At the time of next verification PP shall upload supporting evidence/receipt on SC app for the waste oil that was disposed of to a CPCB/SPCB authorized vendor.

Project developer has provided the hazardous waste inventory and its disposal records to the CPCB/SPCB authorized to DOE and uploaded to the SC app.

B.2. Post-Design Certification changes

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

No temporary deviation is applied

B.2.2. Corrections

Not applicable

B.2.3. Changes to start date of crediting period

Not applicable

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

Not applicable

B.2.5. Changes to project design of approved project

Not applicable

SECTION C. DESCRIPTION OF MONITORING SYSTEM APPLIED BY THE PROJECT

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The project proponent has entered into agreement with the WTG Suppliers (Gamesa) for the operation and maintenance of WTGs. The WTG supplier has dedicated and technically well-equipped O&M team for day to day Operation and maintenance of each WTG. O&M contractor will provide a monthly report, which includes generation data, major breakdown events and machine availability.

The project activity has entered a power purchase agreement for a period of 25 years with the DISCOM. The electricity is fed in the Integrated Indian grid. Monitoring consists of metering the net electricity supplied to the grid ($EG_{facility,y}$). This parameter is based on the monthly JMRs (share certificates) undertaken by DISCOM and Gamesa which is continuously through energy meter. The PP will then raise monthly electricity sales invoices to DISCOM based on the JMR reading. All the meters used in the project activity will be calibrated in once in a five year.

The monitored data will be reported by the PP to the GS consultant on a monthly basis for the calculation and estimation of emission reductions. This data will be checked against invoices raised.

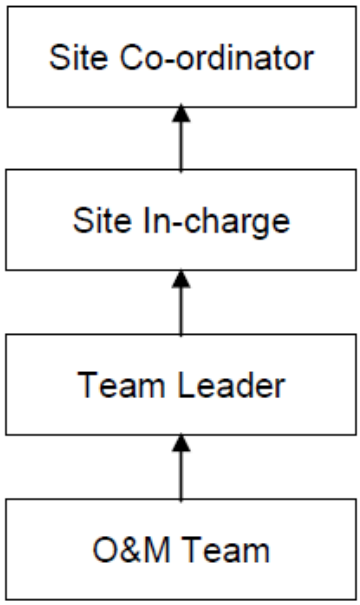
Data storage and Archiving

In accordance with the methodology all the data collected during the crediting period will be archived electronically and kept for at least two years after the end of crediting

period. 100% of the data is monitored and the meters owned by DISCOM/PP are calibrated at regular intervals to ensure low uncertainty in the monitored data.

O&M contractor (Gamesa) will provide a monthly report, which includes generation data, major breakdown events and machine availability. Project manager is responsible for recording of monthly meter readings of export and import. Monthly power export and import data will be sent regularly to site in charge.

The data for the project is compiled by the O&M Contractor and subsequently stored by the PP, the reporting and data flows as per the below mentioned flow chart starting from Site O&M team which monitors day to day operational data and monthly recording. The roles and responsibilities for the project are described as below;



The monitored data will be reported by the PP to the GS consultant on a monthly basis for the calculation and estimation of emission reductions. This data will be checked against invoices raised.

Personal Training:
The training for operating and maintaining the plant will be provided to the O&M team whenever there would be necessity or any technological up gradation

Monitoring Process at project site

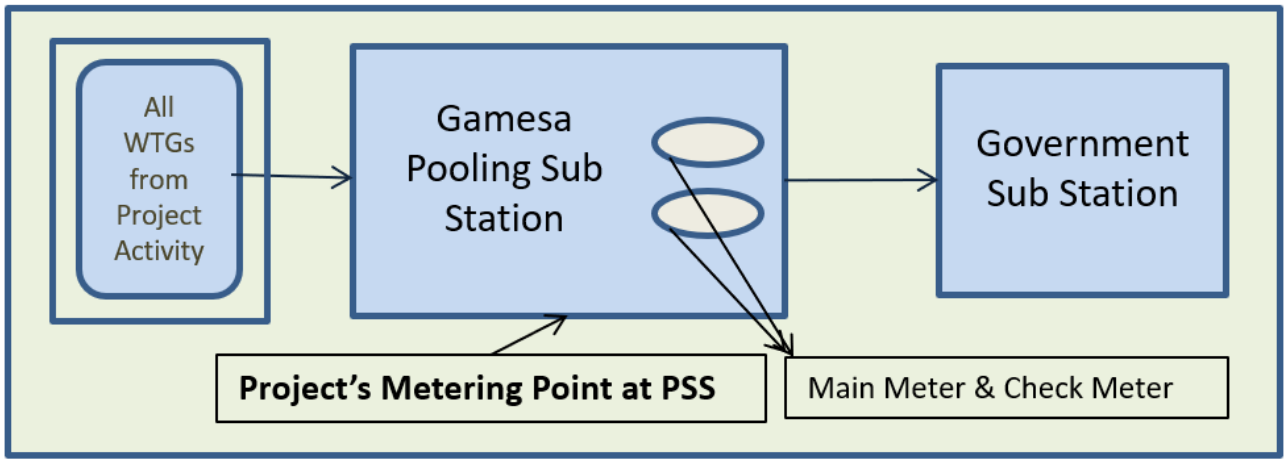
Joint monthly meter reading shall be taken from substation meter by representative of DISCOM and O&M team/service provider (on behalf of the project proponent). It must be noted here that the meter readings as mentioned above shall be calculated as the product of meter multiplication factor and the difference of the current and previous meter readings

Based on the above procedure, the Monthly Wind Energy Certificates shall be provided to the project proponent. This is to be noted that the detail procedure of monitoring is illustrated here for the sake of understanding; for the preparation of monitoring report during periodic verifications, only the net electricity generation value calculated from energy certificates shall be used for emission reduction calculation. No other parameters as explained above shall be used and presented in the monitoring report.

Emergency preparedness:

In case Main meter or Check meter is found to be outside the acceptable limits of accuracy or faulty or not functioning properly, it will be repaired, recalibrated or replaced as soon as possible. In the event that the Main meter is not in service as a result of maintenance, repairs or testing, the Check meter will be used for readings

The project's **metering arrangement** representation



SECTION D. DATA AND PARAMETERS

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

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Data/Parameter	$EF_{OM, y}$

Unit	tCO_2/MWh
Description	Operating Margin CO_2 emission factor for the Indian Grid in year y
Source of data	Central Electricity Authority: "CO2 Emission Database CEA CO2 Baseline database Version 11" published by Central Electricity Authority (CEA), Ministry of Power, Government of India.
Value(s) applied	0.9941
Choice of data or measurement methods and procedures	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 11.0". 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 $= \Sigma_{i=1 \text{ to } n}$ (Net generation in operating margin in year i * Simple operating margin in year i)/$\Sigma_{i= 1 \text{ to } n}$(Net generation in operating margin of year i)
Purpose of data	*Calculation of baseline emissions*
Additional comment	The value is fixed ex-ante

Data/Parameter	**$EF_{BM, y}$**
Unit	tCO_2/MWh
Description	Build Margin CO_2 emission factor for the Indian Grid in year y
Source of data	CEA's "*Baseline Carbon Dioxide Emission Database Version 11.0* "
Value(s) applied	0.9285

Choice of data or measurement methods and procedures	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 11.0*". The value is calculated ex-ante as most recent build margin provided by the CEA.
Purpose of data	*Calculation of baseline emissions*
Additional comment	The value is fixed ex-ante

Data/Parameter	**$EF_{grid,CM,y}$**
Unit	tCO_2/MWh
Description	Combined Margin CO_2 emission factor for the Indian Grid in year y
Source of data	Central Electricity Authority(CEA) of India Database *Version 11.0*
Value(s) applied	0.9777
Choice of data or measurement methods and procedures	This has been calculated based on Operating Margin (OM) and Build Margin (BM) published by Central Electricity Authority (CEA) of India. Please refer section B.6.1 for details.
Purpose of data	Calculation of baseline emissions
Additional comment	The value is fixed ex-ante

D.2 Data and parameters monitored

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SDG 7 & 13:

Data/parameter:	**$EG_{facility,y}$**
Unit	MWh
Description	Quantity of net electricity supplied to the grid during the year y.
Measured/calculated/default	Calculated (based on the measured values of electricity exported and imported)
Source of data	Monthly energy generation statement issued by State Electricity

<table>
<tr><td></td><td>Board. These are called JMR (Joint Meter Reading)</td></tr>
<tr><td>Value(s) of monitored parameter</td><td>
<table>
<tr><th>Period (y)</th><th>$EG_{facility,y}$ (MWh)</th></tr>
<tr><td>01/08/2020 to 31/12/2020</td><td>38,362</td></tr>
<tr><td>Total</td><td>38,362</td></tr>
</table>
</td></tr>
<tr><td>Monitoring equipment</td><td>Energy meter (Details are provided below)
Metering Location: 33K kV side of GSS Substation
All the meters are
Make: Secure
Accuracy of Energy meters: 0.2s
Monitoring Method: recording export & import in “generation statement”
This statement includes, monthly recording of electricity export & import.</td></tr>
<tr><td>Measuring/reading/recording frequency:</td><td>Measurement: Continuous
Recording: Monthly</td></tr>
<tr><td>Calculation method (if applicable):</td><td>Net electricity supplied will be calculated based on the difference between values of “export” and “import” on the energy meter at the Government substation (evacuation point).
(Net Electricity = (Export – Import)
The net electricity will be calculated by State electricity board and provided in the monthly generation statement/JMR/B-form.

The net electricity will be calculated by MPPKVVCL and provided in the monthly generation statement. Hence, the net electricity reading will be directly sourced from the monthly generation statement.</td></tr>
<tr><td>QA/QC procedures:</td><td>Net electricity supplied to the grid by the project activity has been cross checked with invoices.

As per the registered PDD, calibration of meters is under the control of State Utility and frequency of calibration is not within the control of PP. However, as the PDD the PP shall ensure at least once in five year calibration as per the national standard. During the monitoring period the meters have been calibrated and there has been no error or fault in the meters identified during the latest calibration as well.</td></tr>
</table>

<table>
<tr><td></td><td>The energy meters are calibrated as per the minimum calibration frequency mentioned in the PDD. The calibration details of the energy meters are given below:
<table>
<tr><th colspan="3">Energy Meter Serial No Details</th><th>Latest Calibration Date</th><th>Calibration Due Date</th></tr>
<tr><td rowspan="2">PSS Meters</td><td>Main Meter</td><td>XC576471</td><td>11.10.2019</td><td>10.10.2024</td></tr>
<tr><td>Check Meter</td><td>XC576472</td><td>11.10.2019</td><td>10.10.2024</td></tr>
</table></td></tr>
<tr><td>Purpose of data:</td><td>Baseline emission calculation &
To monitor contribution to SDG 7</td></tr>
<tr><td>Additional comments:</td><td>-</td></tr>
</table>

SDG 8:

<table>
<tr><td>Data/parameter:</td><td>Quality of employment</td></tr>
<tr><td>Unit</td><td>No’s</td></tr>
<tr><td>Description</td><td>Trainings provided to employees & O&M staffs</td></tr>
<tr><td>Measured/calculated/default</td><td>Measured</td></tr>
<tr><td>Source of data</td><td>Training records</td></tr>
<tr><td>Value(s) of monitored parameter</td><td>
<table>
<tr><td>Period</td><td>Number of Training provided</td></tr>
<tr><td>01/08/2020 to 31/12/2020</td><td>15</td></tr>
<tr><td>Total</td><td>15</td></tr>
</table></td></tr>
<tr><td>Monitoring equipment</td><td>NA</td></tr>
<tr><td>Measuring/reading/recording frequency:</td><td>Yearly once</td></tr>
<tr><td>Calculation method (if applicable):</td><td>-</td></tr>
<tr><td>QA/QC procedures:</td><td>-</td></tr>
<tr><td>Purpose of data:</td><td>To monitor the contribution to SDG 8 (Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all)</td></tr>
<tr><td>Additional comments:</td><td>-</td></tr>
</table>

Training held during the current monitoring period.

List of Trainings			
Sl.	**Name of the training**	**Date of**	**No of**

No		Training	Beneficiaries
1	Training on snake bite management	12/8/2020	13
2	Covid-19 Awareness training	12/8/2020	13
3	Training on snake bite management	13/08/2020	28
4	Covid-19 Awareness training	13/08/2020	28
5	Covid-19 Awareness training	18/09/2020	18
6	Personality Development Training	18/09/2020	18
7	Defensive driving training	19/09/2020	16
8	Electrical safety training	19/09/2020	19
9	Covid-19 Awareness training	31/10/2020	41
10	Training on PPE (Personal Protective equipment)	31/10/2020	28
11	Training on work permit System	31/10/2020	13
12	Training on handling Portable electrical hand tools	2/11/2020	13
13	Machine Guarding for Portable power tools	26/12/2020	17
14	Covid-19 Awareness training	26/12/2020	17
15	behavioral training on positive thinking	26/12/2020	17

SDG 8

<table>
<tr><td>Data/parameter:</td><td>Quantitative employment and income generation</td></tr>
<tr><td>Unit</td><td>• Number of O&M staffs involved in the project
• Cost spent for O&M</td></tr>
<tr><td>Description</td><td>• Total employment generated due to the implementation of project activity and
• The amount spent for O&M activities due to the project.</td></tr>
<tr><td>Measured/calculated/default</td><td>Measured</td></tr>
<tr><td>Source of data</td><td>Plant employment records</td></tr>
<tr><td>Value(s) of monitored parameter</td><td>
<table>
<tr><td rowspan="2">Monitoring Period</td><td colspan="3">No of Staff</td><td rowspan="2">O&M Cost (Mn INR)</td></tr>
<tr><td>Security</td><td>O&M</td><td>Total</td></tr>
<tr><td>01/08/2020 to 31/12/2020</td><td>34</td><td>27</td><td>61</td><td>27.74</td></tr>
</table>
This includes 8 numbers of O&M team of Gamesa, 17 number of third-party contractors engaged by Gamesa, 2 personnel of Orange and 34 number of security staff employed at project site.
Out of total 61 employees, 15 are skilled and 12 are semiskilled and rest 34 people are unskilled labour.
Out of 61 employees 22 people are locals and rest 39 are Non local.
The O&M cost spent can be verified from the O&M contract signed with Gamesa for all the 25 WTGs.</td></tr>
<tr><td>Monitoring equipment</td><td>NA</td></tr>
</table>

Measuring/reading/recording frequency:	Yearly once
Calculation method (if applicable):	NA
QA/QC procedures:	NA
Purpose of data:	To monitor the contribution to SDG 8 (Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all)
Additional comments:	-

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

Data/Parameter	Value obtained in this monitoring period	Value obtained last monitoring period
Net electricity supplied to the grid (MWh)	38,362	279,972
Quality of employment (no of trainings provided)	15	15
Quantity of employment (No of staff employed)	61	61
Cost of O&M spent (Mn INR)	27.75	145.08
Emission reductions (tCO_2)	37,506	273,728

D.4. Implementation of sampling plan

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Not Applicable

SECTION E. CALCULATION OF SDG IMPACTS

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

>>

SDG 7 Affordable and Clean Energy:

The monitoring parameter for the SDG 7 is Quantity of net electricity supplied to the grid during the year y. Since baseline and pre-project scenario are same, in the

baseline condition no renewable electricity will be supplied to grid from the project location. Hence, the baseline value is zero.

Vintage	Baseline Value
	Quantity of net electricity supplied to the grid (MWh)
01/08/2020 to 31/12/2020	0
Total	0

SDG 8: Decent Work and Economic Growth

The monitoring parameter for the SDG 8 are Number of training provided to employees & O&M staff, Cost spent for O&M and Number of O&M staffs involved in the project. Since baseline and pre-project scenario are same, in the baseline condition these values are zero.

Vintage	Baseline Value		
	Number of training (Nos)	Cost Spent on O&M (Lakh INR)	Number of O&M Staff (Nos)
01/08/2020 to 31/12/2020	0	0	0
Total	0	0	0

SDG 13 Climate Actions

The monitoring parameter for the SDG 13 is GHG emission reduction. The baseline GHG emission is estimated as below:

The baseline emissions are calculated in line with para 39 of AC0002, Version 17, using equation below

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

Where,

BE_y = Baseline emissions in year y (tCO_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 the "Tool to calculate the emission factor for an electricity system" (tCO_2/MWh)

AS per para 41 of ACM0002, version 17, when the project activity is installation of Greenfield power plant, then:

$EG_{PJ,y} = EG_{facility, y}$

Where,

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

The Electricity export & import are monitored continuously and reported monthly in the JMR/B-Form. The monthly reported export & import values as per JMR/B-Form and net generation calculation are given below:

Year	Net Generation (MWh)	Grid Emission Factor (tCO2/MWh)	Baseline emission (tCO2)	Project Emission (tCO2)	Emission Reduction (tCO2)
Year 2020	38,362	0.9777	38,362	0	37,506
Total	**38362**	**0.9777**	**38,362**	**0**	**37,506**

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

SDG 7 Affordable and Clean Energy:

The monitoring parameter for the SDG 7 is Quantity of net electricity supplied to the grid during the year y. In the project situation, the project supplied 38,362MWh electricity during the monitoring period. This can be crosschecked from JMR/B-Form& Invoices.

Vintage	Project Value
	Quantity of net electricity supplied to the grid (MWh)
01/08/2020 to 31/12/2020	38,362
Total	**38,362**

SDG 8: Decent Work and Economic Growth

The monitoring parameter for the SDG 8 are Number of training provided to employees & O&M staff, Cost spent for O&M & Number of O&M staffs involved in the project. During the project scenario, the following is achieved:

Vintage	Project Value

	Number of training (Nos)	Cost Spent on O&M (Mn INR)	Number of O&M Staff (Nos)
01/08/2020 to 31/12/2020	15	27.75	61
Total	15	27.75	**61**

These can be crosschecked from the training records, O&M contract & employment records.

SDG 13 Climate Actions

As per the approved consolidated Methodology ACM0002 (Version 17.0) para 31:

"For most renewable energy power generation project activities, $PE_y = 0$. However, some project activities may involve project emissions that can be significant. These emissions shall be accounted as project emissions by using the following equation:

$$PE_y = PE_{FF,y} + PE_{GP,y} + PE_{HP,y}$$

Where:

PE_y = *Project emissions in year y (t CO_2e/yr)*

$PE_{FF,y}$ = *Project emissions from fossil fuel consumption in year y (t CO_2/yr)*

$PE_{GP,y}$ = *Project emissions from the operation of dry, flash steam or binary geothermal power plants in year y (t CO_2e/yr)*

$PE_{HP,y}$ = *Project emissions from water reservoirs of hydro power plants in year y (t CO_2e/yr)"*

As the project activity is the installation of a new grid-connected Solar power plant/ unit and does not involve any project emissions from fossil fuel, operation of dry, flash steam or binary geothermal power plants, and from water reservoirs of hydro power plants. Therefore $PE_{FF,y}$, $PE_{GP,y}$, $PE_{HP,y}$ are equal to zero and thus, $PE_y = 0$

Vintage	Project Emission (tCO2e)
01/08/2020 to 31/12/2020	0
Total	**0**

E.3. Calculation of leakage

As per the registered PDD, no source of leakage emissions identified under proposed project activity.

Hence, LEy= 0

Vintage	Leakage (tCO2e)
01/01/2020 to 31/12/2020	0
Total	**0**

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

SDG	SDG Impact	Baseline estimate	Project estimate	Net benefit
SDG 7	Renewable Electricity Generated (MWh)	0	38,362	38,362
SDG 8	Trainings provided to O&M staff (Nos)	0	15	15
	Cost Spent on O&M (Million INR)	0	27.75	27.75
	Number of Jobs generated (Nos)	0	61	61
SDG 13	Emission Reduction (tCO2e)	0	37,506	37,506

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[2] achieved during this monitoring period
7	45,899 MWh electricity generation	38,362MWh electricity generation
8	01 Training provided to O&M Staff	15 Training provided to O&M Staff
8	27.75 million INR spent on O&M	27.75 million INR spent on O&M
8	61 jobs created	61 jobs created
13	44,876 tCO_2e emission reduction	37,506 tCO_2e emission reduction

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

The estimated value is based on the estimated value provided for 1 year in the PDD and the actual number of operating days in the monitoring period. The calculation is provided below.

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

SDG Goal	SDG 7	SDG 8			SDG 13
SDG Impact	Electricity generated (MWh)	Trainings provided to O&M staff (Nos)	Money spent on O&M (Mn INR)	Jobs Created (Nos)	Emission reduction (tCO2)
Estimation as per PDD (for 1 year)	109,499	03	63.43	50	107,058
Number of days in the monitoring period	153	153	153	153	153
Estimation for the monitoring period	45,899	01	27.75	NA	44,876

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

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For SDG 7 & SDG 13, the Net electricity generation and actual emission reduction for the monitoring period is about 16.4% lesser than the estimated emission reduction as per PDD. Such variation is possible majorly due to the varying capacity utilization factors during the Non peak wind season and export outages due to the breakdowns. The lesser generation is due to the reason that the data covered in this monitoring period is only for the months of August 2020 to December 2020 which are non peak seasons for the power generation. For most of the wind power projects the monsoon months between June and September are the chief wind power generation months providing nearly 85% of the annual output.

Another reason for the lower generation is due to the breakdown and outages. As per the plant records generation is interrupted for about 267 hours out of 3672 of operational hours during this monitoring period due to the break downs and outages occurred due to preventive as well as unscheduled breakdowns.

SECTION F. SAFEGUARDS REPORTING

Safeguarding Principle 4.3.4: Release of pollutants

Data/parameter:	Air quality

Mitigation Measures followed	In order to reduce dust emissions during the construction phase, the following dust suppression measures stipulated and implemented: • Spraying water and covering material trucks' body to minimize dust; • Reuse of water for sprinkling of unpaved roads • Imposition of speed controls for vehicles and unpaved site roads • Well-maintained diesel-powered mechanical equipment to avoid black smoke emissions; • Shut-down of diesel-powered mechanical equipment or trucks inside the worksites when they are not in operation.
Source	Calculation of emission reductions from the power generation of the project by using Central Electricity Authority: "CO2 Emission Database CEA CO2 Baseline database Version 11" published by Central Electricity Authority (CEA), Ministry of Power, Government of India And Interview with maintenance staff
Additional comments:	-

Safeguarding Principle 4.2.2: Erosion and/or Water Body Instability

Data/parameter:	Soil Erosion
Mitigation Measures followed	**General soil erosion and sediment control measures would include:** • Keep open areas of excavation to a minimum and construction activities restricted to dry months to avoid heavy rainfalls; • Using existing roads and lanes used by land owner. • Stockpiles of materials placed away from drainage lines and formed with sediment control structures placed immediately down slope; • Construction debris and excavated material were cleared up at regular intervals • Excavated material stock piled and used for backfilling of foundations, platforms etc. • Minimization of traffic in construction zones and use of a dedicated parking area, i.e. site compound; • Re-vegetation taken up as necessary after construction, in order to reduce the risk of soil erosion. **Specific mitigation measures followed in the operational phase of the project:** • • Proper drainage controls such as culverts, cut-off trenches shall be used to ensure proper management of surface water runoff to prevent erosion. • • Waste oil generated shall be stored separately in containers in a secured location in the maintenance room. The storage location and the containers are properly marked. • • The waste / used waste oil from the WTGs to be disposed of to a CPCB/SPCB authorized vendor.

	A hazardous waste inventory is maintained as per the provisions of the Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2008. The possibility of soil erosion due to the project operation is negligible to none. Hence, does not involve many mitigation measures.
Source	Project logbook, or interview with local villagers
Additional comments:	-

Safeguarding Principle 4.3.1: landscape modification and soil

Data/parameter:	Maintenance of Landscape visual impact
Mitigation Measures followed	• Detailed ESIA study conducted to understand if any of the location needs to be altered. • Locals were consulted wherever a WTG location or access road was in vicinity to a settlement. • The WTGs are painted with non-reflect paints and are not glary. • Re-vegetation taken up as necessary after construction, in order to reduce the risk of soil erosion.
Source	Interview with O&M team
Additional comments:	-

Safeguarding Principle 4.3.11: Endangered Species

Data/parameter:	Bird & Bat deaths
Mitigation Measures followed	• During the siting activity, it was ensured that there are no water bodies beside WTGs. • Water pits are not allowed around the WTGs. • None of the area of WTGs erection or transmission lines are under sensitive or under areas of conservation importance • The transmission lines wherever required has reflectors • Storm water control around within 100m of every WTG
Source	Bird Strike register, or interview with local villagers.
Additional comments:	-

Safeguarding Principle 3.4.2: Forced Eviction and displacement

Data/parameter:	Involuntary Resettlement & expropriation
Mitigation measures followed	The project activity does not involve in any involuntary resettlement. Further all the land purchased is private land purchased from on mutual consent. The project proponent ensured the following during land purchase: • No land with existing structures was purchased

	• No land from any marginalized farmers was purchased • No WTG land was within vicinity of settlements • All the purchase process followed national and state laws for land purchase. • As the purchase of land is a voluntary process it does not involve "The National Rehabilitation and Resettlement Policy, 2007,
Source	Interview with local villagers & Grievance register
Additional comments:	-

Safeguarding Principle 3.3: Community Health, Safety and Working Conditions

Data/parameter:	Safety of Workers
Mitigation measures followed	The EHS team is responsible for ascertaining the safety procedures are followed, some being: • Proper training to all the workers at site • Safety gear mandatory while Working at heights and inside the site location • Job card in conformity with safety protocol released before taking up any task by O&M team • Implementation of Loading & Unloading protocols • Use of vehicles with PUC & proper maintenance of vehicles • Control speed of vehicles
Source	Site Records of helmet, shoes & gloves distributed to staffs & Records of safety training.
Additional comments:	-

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.

No input or grievances received from any stakeholder during the monitoring period.

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

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Not applicable

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

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No legal contest or dispute arisen with the project during the monitoring period.

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