

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

0 - Description of project

0 - Implementation of project

0 - Description of monitoring system applied by the project

0 - Data and parameters

0 - Calculation of SDG Impacts

0 - Safeguards Reporting

0 - Stakeholder inputs and legal disputes

KEY PROJECT INFORMATION

Key Project Information

GS ID (s) of Project (s)	GS 6999
Title of the project (s) covered by monitoring report	21 MW Wind Energy Project by Shree Cement Limited
Version number of the PDD/VPA-DD (s) applicable to this monitoring report	04
Version number of the monitoring report	07
Completion date of the monitoring report	08/03/2024
Date of project design certification	20/11/2019
Date of Last Annual Report	20/12/2022
Monitoring period number	03
Duration of this monitoring period	01/01/2021 to 27/03/2023 (including both start and end dates)
Project Representative	Shree Cement 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 20.0
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
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SDG 7	Affordable and Clean Energy: Ensure access to affordable, reliable, sustainable and modern energy for all	93,603.62	MWh												
SDG 8	Decent Work and Economic Growth: Promote inclusive and sustainable economic growth, employment and decent work for all	Number of employment opportunities has been provided: <table><tr><td>2021</td><td>36</td></tr><tr><td>2022</td><td>34</td></tr><tr><td>2023</td><td>14</td></tr></table> Trainings have been organized: <table><tr><td>2021</td><td>03</td></tr><tr><td>2022</td><td>03</td></tr><tr><td>2023</td><td>01</td></tr></table>	2021	36	2022	34	2023	14	2021	03	2022	03	2023	01	Number
2021	36														
2022	34														
2023	14														
2021	03														
2022	03														
2023	01														
SDG 13	Take urgent action to combat climate change and its impacts	87,687	tCO ₂ e												

Table 2 – Product Vintages

		Amount Achieved			
Start Dates	End Dates	SDG 7	SDG 8(8.5.1)	SDG 8(8.6.1)	SDG 13
01/01/2021	31/12/2021	44,678.97 MWh	36	03	41,855 tCO ₂ e
01/01/2022	31/12/2022	40,749.63 MWh	34	03	38,174 tCO ₂ e
01/01/2023	27/03/2023	8,175.02 MWh	14	01	7,658 tCO ₂ e

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 electricity generated to the state grid. The project activity generates electricity using wind energy. The generated electricity is exported to the regional grid system, which is under the purview of the INDIAN electricity 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 utilizing Suzlon made S -97 WTGs 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 being generated through sustainable means without causing any negative impact on the environment. Major Milestone of Project activity:

1. The letter of intent is on 29/11/2017 and order is placed on 20/12/2017.
2. The project activity is commissioned in three phases like 28/03/2018, 31/03/2018 and 28/06/2018

Details of commissioning dates along with WTG ids are given below:

WTG Details	Date of Commissioning (DOC)
KST 091	28/03/2018
KST 129	28/03/2018
KST 134	28/03/2018
KST 145	31/03/2018
KST 146	31/03/2018
KST 127	31/03/2018
KST 179	31/03/2018
KST 132	28/06/2018
KST 133	28/06/2018
KST 092	28/06/2018

Further major milestones and timeline being followed towards implementation of the project activity are as follows:

Sr No.	Particulars	Date
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1	DPR of project submitted by third party	13/07/2017
2.	Stakeholder consultation meeting	16/09/2017
3.	LOI Issued to technology supplier	29/11/2017
4.	PO Issued to technology supplier	20/12/2017
5.	Commissioning of project activity	28/03/2018, 31/03/2018 and 28/06/2018
6.	Registration in GS4GG	20/11/2019

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 01/01/2021 to 27/03/2023 (inclusive of both the dates) the project resulted in emission reductions of 87,687 tCO₂e and underwent continued operation other than scheduled maintenance and breakdowns.

Vintage wise emission reduction during the entire monitoring period are as follows:

Period	Amount
01/01/2021 to 31/12/2021	41,855 tCO ₂ e
01/01/2022 to 31/12/2022	38,174 tCO ₂ e
01/01/2023 to 27/03/2023	7,658 tCO ₂ e

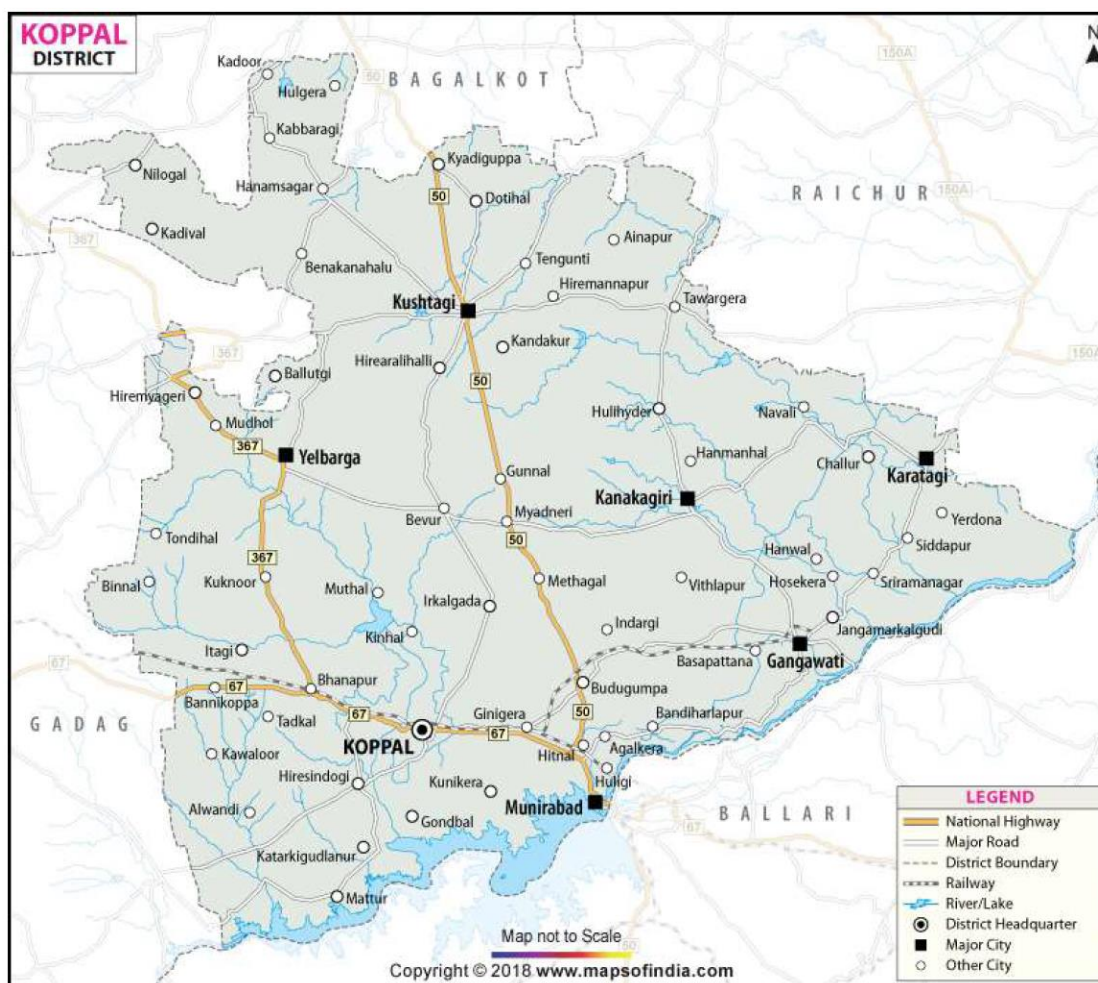
A.2. Location of project

The project activity is located in Kushtagi Wind Farm in Koppal district, Karnataka, India. The project activity consists of ten 2.1 MW wind turbines in the district of Koppal in the state of Karnataka, India.

The specific geographical coordinates of the individual WTGs are mentioned in table below:

Project Investor	WTG Location No	Latitude (D° M' Sec'')	Longitude (D° M' Sec'')
Shree Cement Limited	KST 091	15°52'49.43''	76°12'00.23''
	KST 092	15°52'58.59''	76°13'46.39''
	KST 127	15°53'57.68''	76°13'12.72''
	KST 129	15°53'15.44''	76°11'16.37''

	KST 132	15°53'05.95"	76°12'01.57"
	KST 133	15°53'34.38"	76°10'35.56"
	KST 134	15°52'28.57"	76°12'12.61"
	KST 145	15°53'05.62"	76°13'06.86"
	KST 146	15°53'21.05"	76°13'40.58"
	KST 179	15°52'49.83"	76°13'02.40"



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 20.0¹
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 07-** Tool to calculate the emission factor for an electricity system - Version 07.0² (EB 100, Annex 04)
- **Tool 01-** Tool for the demonstration and assessment of additionality - Version 07.0.0³ (EB 70, Annex 08)
- **Tool 27-** Investment analysis - Version 08.0.0⁴ (EB 97, Annex 08)

A.4. Crediting period of project

Start date	28/03/2018
Crediting Period	28/03/2018 to 27/03/2023
Duration	5 years
Type	Renewable

SECTION B. IMPLEMENTATION OF PROJECT

B.1. Description of implemented project

The total installed capacity of the project is 21 MW, which comprises of total 10 number of Wind Turbine Generator (WTG) in Karnataka. The WTGs used in the project activity are of Suzlon S-97 model. Three WTGs were commissioned on 28/03/2018, four WTGs were commissioned on 31/03/2018 and the rest three WTGs were commissioned on 28/06/2018.

All the WTGs are connected to KPTCL Kushtagi substation.

The technical specification of the S-97 model of WTGs are as follows:

¹ <https://cdm.unfccc.int/methodologies/DB/HF3LP6O41YY0JIP1DK6ZRJO9RSCX3S>

² <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf>

³ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf>

⁴ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-27-v8.pdf>

MODEL	S 97 – 2.1 MW
Operating Data	
Rated power	2.1 MW
Cut-in wind speed	4 m/s
Rated wind speed	11 m/s
Cut-out wind speed	25 m/s
Rotor	
Pitch system	Electric drive with electric brake, gear box, frequency converter and batteries
Diameter	97 m
Swept area	7386 m ²
Blade material type	Glass-fibre reinforced plastic (GRP)/Polyester
Generator	
Type	Asynchronous 3 phase induction with slip rings operated with rotor circuit inverter system (DFIG)
Frequency	50/60 Hz
Protection	IP 54, IP23 for slip ring unit
Cooling system	Air cooled
Insulation	Class H
Braking System	
Aerodynamic brake	Pitch/full blade
Mechanical brake	Hydraulic disc brake, activated by hydraulic pressure
Gearbox	
Type	3 stages (One planetary & Two helical)
Yaw System	
Type	Electric motors with brake, gear box and pinion
Bearings	3 (1 per blade) , Material - 42CrMo4 QT
Tower	
Type	Tubular Steel Tower (4 sections)

B.1.1 Forward Action Requests

Not Applicable

B.2. Post-Design Certification changes

Not Applicable

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

Not Applicable

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

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 will be implemented by the project proponent describes about the monitoring organisation, parameters to be monitored, monitoring practices, quality assurance, quality control procedures, data storage and archiving.

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 regional grid, forms the baseline for the project activity.

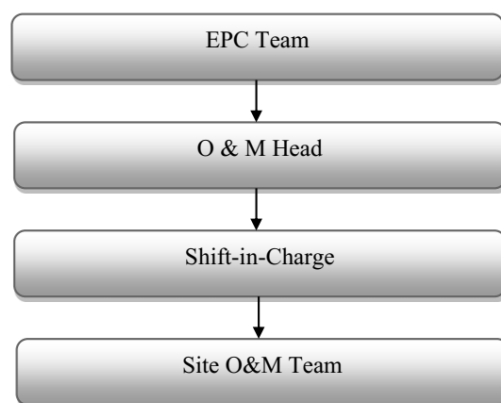
Since the baseline emission factor is based on an ex-ante determination, monitoring of this parameter is not required. The sole parameter for monitoring is the net electricity exported to the grid.

Monitoring roles and responsibilities

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

The 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 energy sales receipt or installed meters reading for identification of any discrepancies in data collection and taking suitable action to rectify them.

Responsibilities of Shift In-charge: Responsible for daily 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 at the feeders are maintained and owned by state electricity board. Neither the project proponent nor the site personnel have any control over it. The records are cross-checked with the records of sold electricity to state electricity board. The meters are calibrated by state electricity board at-least once in five years.

Data Measurement:

The export and import energy are measured continuously using above mentioned Main and Check meters. Export & Import readings of Main & Check meters are taken on monthly basis by authorized officer of state electricity board in the presence of PP or representative of PP. The meter readings are taken jointly and signed by the representatives of the state electricity board and project investors. Based on the readings, invoices are raised by project investors. These invoices can be used for cross checking the meter readings taken for the project activity. It is to be noted though PP or PP representative is available during meter reading, the calculations of net electricity supplied to grid is completely under purview of state electricity board officer and PP do not have any control on it. Besides, accuracy class of meters and calibration frequency is under purview of state electricity board officer and PP do not have any control on it.

PP got the monthly credit report from where net electricity supplied to grid is obtained and used for emission reduction calculations.

Apportioning:

In case of common metering arrangement, the apportioning is done by state electricity board and PP is getting break up sheet where the energy supplied by project activity to grid is mentioned.

The same break up sheet is used for invoice purpose. This apportioning process is under control of state electricity board and PP do not have any control on it.

Data Archiving:

Monthly data is archived electronically and in paper form and stored for the entire crediting period and two years thereafter.

Emergency preparedness:

The project activity does 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, 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.

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 is 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 (Indicators 13.2.1)
Data/parameter	EF_{grid,OM,y}
Unit	tCO ₂ /MWh
Description	Operating Margin CO ₂ e emission factor in year y
Source of data	Calculated from CEA database, Version 14.0 ⁵ December 2018
Value(s) applied	0.9610
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 2015-16, 2016- 17 and 2017-18. The data is obtained from "CO ₂ Baseline Database for Indian Power Sector" version 14.0, published by the Central Electricity Authority, Ministry of Power, Government of India.
Purpose of data	For the calculation of the Baseline Emission
Additional comment	This parameter is fixed ex-ante for the entire crediting period.

Relevant SDG Indicator	SDG 13 (Indicators 13.2.1)
Data/parameter	EF_{grid,BM,y}
Unit	tCO ₂ /MWh
Description	Build Margin CO ₂ e emission factor in year y
Source of data	Calculated from CEA database, Version 14.0 ⁶ , December 2018
Value(s) applied	0.8644
Choice of data or Measurement methods and procedures	Calculated as per "Tool to calculate the emission factor for an electricity system", version 07.0 as per the latest data available for the most recent year 2017-18. The data is obtained from "CO ₂ Baseline Database for Indian Power

⁵ https://cea.nic.in/wp-content/uploads/baseline/2020/07/user_guide_ver14.pdf

⁶ https://cea.nic.in/wp-content/uploads/baseline/2020/07/user_guide_ver14.pdf

	Sector" version 14.0, published by the Central Electricity Authority, Ministry of Power, Government of India
Purpose of data	For the calculation of the Baseline Emission
Additional comment	This parameter is fixed ex-ante for the entire crediting period.

Relevant SDG Indicator	SDG 13 (Indicators 13.2.1)
Data/parameter	EF_{grid,CM,y}
Unit	tCO ₂ /MWh
Description	Combined Margin CO ₂ e emission factor in year y
Source of data	Calculated from CEA database, Version 14.0 ⁷ , December 2018
Value(s) applied	0.9368
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 Emissions
Additional comment	This parameter is fixed ex-ante for the entire crediting period.

D.2 Data and parameters monitored

Relevant SDG Indicator	SDG 13 (Indicators 13.2.1)
Data / Parameter	ER_y
Unit	tCO ₂

⁷ https://cea.nic.in/wp-content/uploads/baseline/2020/07/user_guide_ver14.pdf

Description	Emission reductions achieved										
Source of data	Summarized in ER sheet of "GS4GG 6999 ER sheet v05 dated 08/03/2024 " Site metering reading records were used to compile the data.										
Value(s) applied	<table> <tr> <th>Monitoring Period</th><th>Values</th></tr> <tr> <td>01/01/2021 to 31/12/2021</td><td>41,855 tCO₂</td></tr> <tr> <td>01/01/2022 to 31/12/2022</td><td>38,174 tCO₂</td></tr> <tr> <td>01/01/2023 to 27/03/2023</td><td>7,658 tCO₂</td></tr> <tr> <td>Total</td><td>87,687 tCO₂</td></tr> </table>	Monitoring Period	Values	01/01/2021 to 31/12/2021	41,855 tCO ₂	01/01/2022 to 31/12/2022	38,174 tCO ₂	01/01/2023 to 27/03/2023	7,658 tCO ₂	Total	87,687 tCO₂
Monitoring Period	Values										
01/01/2021 to 31/12/2021	41,855 tCO ₂										
01/01/2022 to 31/12/2022	38,174 tCO ₂										
01/01/2023 to 27/03/2023	7,658 tCO ₂										
Total	87,687 tCO₂										
Measurement methods and procedures	The baseline emissions are calculated as the electrical energy baseline EG _{PJ,y} expressed in MWh of electricity produced by the renewable generating unit multiplied by an emission factor and project emissions and leakage emissions are subtracted from baseline emissions to obtain emission reductions; project emissions and leakage emissions being zero in this project activity, here Baseline Emissions = Emissions Reductions										
Monitoring frequency	As per monitoring period										
QA/QC procedures	Not Applicable										
Purpose of data	To Monitor the SDG 13 Indicator										
Additional comment	Data will be archived in paper & electronic form for two years after the end of crediting period or of the last issuance of VERs for this project activity, whichever occurs later.										

Relevant SDG Indicator	SDG 7 (Indicators 7.2.1)						
Data / Parameter	EG_{PJ,y}						
Unit	MWh						
Description	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y in MWh						
Source of data	Monthly joint meter reading reports/B-Forms						
Value(s) applied	<table> <tr> <th>Monitoring Period</th><th>Values</th></tr> <tr> <td>01/01/2021 to 31/12/2021</td><td>44,678.97 MWh</td></tr> <tr> <td>01/01/2022 to 31/12/2022</td><td>40,749.63 MWh</td></tr> </table>	Monitoring Period	Values	01/01/2021 to 31/12/2021	44,678.97 MWh	01/01/2022 to 31/12/2022	40,749.63 MWh
Monitoring Period	Values						
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01/01/2022 to 31/12/2022	40,749.63 MWh						

	01/01/2023 to 27/03/2023	8,175.02 MWh
	Total	93,603.62 MWh
Measurement methods and procedures	The electricity exported and imported by the project activity is measured through energy meters having accuracy class of 0.2s. Net electricity supplied to the grid by the project plant in a given month = Export, kWh – Import, kWh The 115% of import and transmission loss if any would be accounted while calculating net electricity supplied to grid as per PPA.	
Monitoring frequency	Continuous monitoring and monthly recording	
QA/QC procedures	The meters are approved, tested & sealed by the State Utility. The meters are in the custody of State Utility. The frequency of calibration is once in 5 years. The monthly electricity supplied/exported by the project activity in the JMR report is cross checked with the monthly invoices of sale. In the absence or delay in the meter calibration appropriate Guidelines are applied appropriately to confirm the conservativeness of metering. The metering arrangement, accuracy class of meters, calibration frequency is under control of state electricity board and PP do not have any control on it. PP is getting value of net electricity supplied to grid and the same is considered the monitoring parameter. The billing is raised based on substation meters. For detailed schedule of calibration during present monitoring period please refer to Appendix 1.	
Purpose of data	To Monitor the SDG 7 Indicator	
Additional comment	Data will be 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	SDG 8 (Indicators 8.5.1)
Data / Parameter	Number of employment generation
Unit	Number
Description	Number of people employed directly due to the project activity

Source of data	Plant records or the training records for all the employees/Letter from O&M contractor for employment generation/ VVB interview with employees, local stakeholders etc.																								
Value(s) applied	Total employment for present monitoring period is 30 with below breakup 2021 : 36 2022 : 34 2023 : 14 Further below is the breakup of employment generated during the monitoring period <table><tr><td>Year</td><td>Skilled</td><td>Unskilled</td><td>Male</td><td>Female</td><td>Total</td></tr><tr><td>2021</td><td>36</td><td>0</td><td>36</td><td>0</td><td>36</td></tr><tr><td>2022</td><td>34</td><td>0</td><td>34</td><td>0</td><td>34</td></tr><tr><td>2023</td><td>14</td><td>0</td><td>14</td><td>0</td><td>14</td></tr></table>	Year	Skilled	Unskilled	Male	Female	Total	2021	36	0	36	0	36	2022	34	0	34	0	34	2023	14	0	14	0	14
Year	Skilled	Unskilled	Male	Female	Total																				
2021	36	0	36	0	36																				
2022	34	0	34	0	34																				
2023	14	0	14	0	14																				
Measurement methods and procedures	PP has provided salary slips and employment agreements of persons getting direct 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*8) = INR 258. This is higher than the average wage per hour in India (Average hourly earning of highly skilled workers for Zone C is INR 26.85).																								
Monitoring frequency	Monthly monitoring and annual compilation																								
QA/QC procedures	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. 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".																								
Purpose of data	To Monitor the SDG 8 Indicator																								
Additional comment	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	SDG 8 (Indicators 8.6.1)																	
Data / Parameter	Quality of Employment																	
Unit	Number																	
Description	Number of trainings provided per year																	
Source of data	Plant records or the training records for all the employees/Letter from O&M contractor for employment generation/ VVB interview with employees, local stakeholders etc.																	
Value(s) applied	2021: 03																	
	2022: 03																	
	2023: 01																	
	HSE training																	
	<table><tr><td>Date(from)</td><td>Date(to)</td><td>Topic</td><td>No. of participants</td></tr><tr><td>13/12/2021</td><td>13/12/2021</td><td>HSE training</td><td>15</td></tr><tr><td>08/02/2023</td><td>08/02/2023</td><td>HSE training</td><td>21</td></tr></table>				Date(from)	Date(to)	Topic	No. of participants	13/12/2021	13/12/2021	HSE training	15	08/02/2023	08/02/2023	HSE training	21		
	Date(from)	Date(to)	Topic	No. of participants														
	13/12/2021	13/12/2021	HSE training	15														
08/02/2023	08/02/2023	HSE training	21															
Technical training																		
<table><tr><td>Sr No.</td><td>Date (from)</td><td>Date (to)</td><td>Topic</td><td>No. of participants</td></tr><tr><td>1.</td><td>23/08/2021</td><td>27/08/2021</td><td>Wind Turbine S111_HH140 Components, Wind resource planning, WTG Safety, Micro siting, Forecasting and scheduling</td><td>4</td></tr><tr><td>2.</td><td>29/08/2021</td><td>01/09/2021</td><td>WTG site training including switchyard</td><td>4</td></tr></table>				Sr No.	Date (from)	Date (to)	Topic	No. of participants	1.	23/08/2021	27/08/2021	Wind Turbine S111_HH140 Components, Wind resource planning, WTG Safety, Micro siting, Forecasting and scheduling	4	2.	29/08/2021	01/09/2021	WTG site training including switchyard	4
Sr No.	Date (from)	Date (to)	Topic	No. of participants														
1.	23/08/2021	27/08/2021	Wind Turbine S111_HH140 Components, Wind resource planning, WTG Safety, Micro siting, Forecasting and scheduling	4														
2.	29/08/2021	01/09/2021	WTG site training including switchyard	4														

	3.	22/08/2022	27/08/2022	Wind Turbine S111_HH140 Components, Wind resource planning, WTG Safety, Micro siting, Forecasting and scheduling	5
	4.	29/08/2022	02/09/2022	WTG site training including switchyard	5
	5.	29/09/2022	01/10/2022	Wind turbine WRD113 & Switchyard	3
Measurement methods and procedures	Together with the technology supplier, the Project Participant also organizes training for the staff on the technology and the monitoring of the plant operation, and the emergency and safety procedures at regular intervals.				
Monitoring frequency	Annual				
QA/QC procedures	The training records for all the employees				
Purpose of data	To Monitor the SDG 8 Indicator				
Additional comment	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 applicable as this project activity is not included in community service activities.

Data/Parameter	Value obtained in this monitoring period	Value obtained last monitoring period
N.A.	N.A.	N.A.
N.A.	N.A.	N.A.

N.A.	N.A.	N.A.
N.A.	N.A.	N.A.

D.4. Implementation of sampling plan

No sampling is required.

SECTION E. CALCULATION OF SDG IMPACTS

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

SDG 13 Climate Action

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.

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

Where,

$EG_{PJ,y}$ = Total quantity of net electricity delivered to the national grid = 93,603.62

MWh

$EF_{grid,CM,y}$ = Baseline emission factor = 0.9368 tCO₂e/MWh

BE_y = 93,603.62 * 0.9368
= 87,687 tCO₂e (rundown values)

Hence, baseline value of SDG 13 Climate Action value is 87,687 tCO₂e.

SDG 7: Affordable and Clean Energy

Total quantity of net electricity delivered to the national grid = 93,603.62 MWh due to implementation of the project activity.

However, the wind energy based electricity generation project being a greenfield project, in baseline scenario, there is no electricity generation.

Hence, baseline value of SDG 7 i.e. Affordable and Clean Energy is zero.

SDG 8: Decent Work and Economic Growth

This is a greenfield project. Hence, there was no employment or training in absence of project activity. Therefore, the value of SDG 8 i.e. Decent Work and Economic Growth is zero.

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

SDG 7: Affordable and Clean Energy

For the current monitoring period, the clean energy contributed by the project activity is 93,603.62 MWh.

SDG 8: Decent Work and Economic Growth

The project activity has led to employment opportunities which would not have been possible in the baseline scenario. During the current monitoring period, the project activity provided employment to 36 persons (in 2021), 34 persons (in 2022) and 14 persons (in 2023); besides due to the project activity total 07 trainings (03 in 2021, 03 in 2022 and 01 in 2023) have been provided in the current monitoring period.

SDG 13: Climate Action

For the current monitoring period, the amount of CO₂ reductions achieved is 87,687 tCO₂e.

E.3. Calculation of leakage

As per the consolidated methodology ACM0002 v20.0, no leakage emission through the renewable project electricity generation.

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

SDG	SDG Impact	Baseline estimate	Project estimate	Net benefit
13	Climate Action	87,687 tCO ₂ e	0	87,687 tCO ₂ e
7	Affordable and Clean Energy	0	93,603.62 MWh	93,603.62 MWh

8	Decent Work and Economic Growth	0	Number of employment opportunities created:		Number of employment opportunities created:	
			2021	36	2021	36
			2022	34	2022	34
			2023	14	2023	14
			Number of trainings provided:		Number of trainings provided:	
			2021	03	2021	03
			2022	03	2022	03
			2023	01	2023	01

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 ⁸ achieved during this monitoring period
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13	100,169 tCO ₂ e	87,687 tCO ₂ e
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7	106,927 MWh	93,603.62 MWh
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8	10 people employment and 01 trainings/year	Number of employments created:	
		2021	36
		2022	34
		2023	14
		Number of trainings provided:	
		2021	03
		2022	03
		2023	01

⁸ Whenever emission reductions are capped, both the original and capped values used for calculations must be transparently reported. Use brackets to denote original values.

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

SDG 13 Climate Action

As per GS4GG PDD, 44,806 tCO₂e is the amount of GS VER generated annually. Therefore, following unitary method, the amount of estimated ex ante for this monitoring period is identified. The total number of days in this monitoring period is 816.

$$= (44,806/365) * 816$$

$$= 100,169 \text{ tCO}_2\text{e}$$

SDG 7: Affordable and Clean Energy

As per GS4GG PDD, 47,829 MWh electricity is estimated to be generated by the project activity annually. Therefore, for 816 days in this monitoring period, SDG 7 value is estimated to be

$$= (47,829/365) * 816$$

$$= 106,927 \text{ MWh}$$

SDG 8: Decent Work and Economic Growth

Annual estimate has been considered for SDG i.e. employment of 10 persons and minimum 01 training per year.

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

SDG 7 and SDG 13:

Achieved SDG impacts (SDG 7 and SDG 13) are about 12.46% less than that estimated over this monitoring period. This decrease is attributed to the facts like change in wind speed due to erratic weather conditions, grid availability etc. which are beyond the control of PP. Moreover, lower achieved GHG emission reductions are conservative.

SDG 8:

Number of trainings and employments created are a little bit higher than estimated values which is conservative.

SECTION F. SAFEGUARDS REPORTING

As per the safeguarding Principle Assessment in Appendix-1 of the GS4GG PDD, there are no safeguarding principles which are to be included in the monitoring plan or hold any relevance to the project activity. Also, there is no impact (positive/negative) for any mitigation measures, being applicable to any of the safeguarding principles. Hence, this section is not relevant.

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.

As a part of continuous feedback from stakeholders, the grievance(feedback) register is placed at site office and is monitored regularly – if any grievance is received from any stakeholder, that is addressed on immediate basis.

During the monitoring period no grievances have been received, the comments received are satisfactory and appreciating in nature. The copies of grievance register (on sample basis) have been provided to the VVB.

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

Not Applicable as there were no negative feedback logged during the monitoring period.

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

Not Applicable as there were no negative feedback logged during the monitoring period.

Appendix 1: Energy Meter Details

Main meter

Serial No.	18015377	21003390	
Type	ETV	ETV	
Make	L&T	L&T	
Accuracy class	0.2s	0.2s	
Period of operation during the monitoring period	01/01/2021 to 15/03/2022	15/03/2022 to 27/03/2023	
Calibration date	23/02/2018	17/02/2022	16/12/2022
Valid till	22/02/2023	16/02/2027	15/12/2027

Main meter (Serial no. 18015377) has been replaced on 15/03/2022 as it was found faulty and replaced by new meter (serial no. 21003390).

Check meter

Serial No.	18015378	
Type	ETV	
Make	L& T	
Accuracy class	0.2s	
Period of operation during the monitoring period	01/01/2021 to 27/03/2023	
Calibration date	23/02/2018	20/01/2021
Valid till	22/02/2023	19/01/2026

Considering the dates of calibration of meters, it can be concluded that there has not been any delay in calibration of meters.

APPENDIX 2. Plant Breakdown Details

Date from	Date to	Duration	Event allocation	Category
07/02/2021	10/02/2021	54:06	Utility	Internal grid failure
31/05/2021	02/06/2021	51:00	Utility	Force Majeure
17/10/2021	19/10/2021	40:06	Manufacturer	WTG breakdown
23/01/2022	25/01/2022	31:43	Manufacturer	Predictive maintenance
01/08/2022	04/08/2022	52:04	Utility	Force Majeure

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