

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

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KEY PROJECT INFORMATION

Key Project Information

GS ID (s) of Project (s)	GS11404
Title of the project (s) covered by monitoring report	Lingasugur Wind Power Project in Karnataka
Version number of the PDD/VPA-DD (s) applicable to this monitoring report	06
Version number of the monitoring report	06
Completion date of the monitoring report	22/07/2023
Date of project design certification	
Date of Last Annual Report	N/A
Monitoring period number	01
Duration of this monitoring period	01/10/2019 to 30/06/2022(both days are included)
Project Representative	EKI Energy Services 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 Version 20.0, Grid-connected electricity generation from renewable sources
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 13- Take urgent action to combat climate	Emission reductions	208,793 tCO ₂ e	GSVER

change and its impact			
SDG 7– Ensure access to affordable, reliable and modern energy for all	MWh of renewable energy generated	230,149.034	MWh
SDG 8 – Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Number of trainings and hiring through project	Total number of trainings imparted to employees during the entire monitoring period: 30 Total number of employment opportunities ¹ created during the entire monitoring period: 47	Number of trainings and Employment generated through project

Table 2 – Product Vintages

		Amount Achieved		
Start Dates	End Dates	SDG 7	SDG 8	SDG 13
01/10/2019	31/12/2019	12,159.16 MWh	10 people were employed and 1 trainings were conducted	10,906 tCO ₂ e(GSVER)
01/01/2020	31/12/2020	86,388.94 MWh	11 people were employed and 2 trainings were conducted	77,483 tCO ₂ e(GSVER)
01/01/2021	31/12/2021	90,734.19 MWh	16 people were employed and 8 trainings	82,380 tCO ₂ e(GSVER)

¹ It is to be noted that the employment numbers are not cumulative (unlike ERs) and the year-wise bifurcation is given in Table 2 for both employment & training.

			were conducted	
01/01/2022	30/06/2022	40,866.74 MWh	10 people were employed and 19 trainings were conducted	38,024 tCO ₂ e(GSVER)

SECTION A. DESCRIPTION OF PROJECT

A.1. General description of project

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

The project activity replaces anthropogenic emissions of greenhouse gases of 208,793 tCO₂e , thereon displacing 230,149.034 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 40 MW; which involves operation of 20 WTGs of 2 MW capacity each, in the state of Karnataka in India.

Project Investor	Project Type	Total Project Capacity	State	Usage
ReNew Wind Energy (AP) Private Limited	Wind	40 MW	Karnataka	Sale to Third Party through power supply to Grid

The project activity start date is 30/06/2015, which is date of signing of supply contract with Gamesa Wind Turbines Private Limited.

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

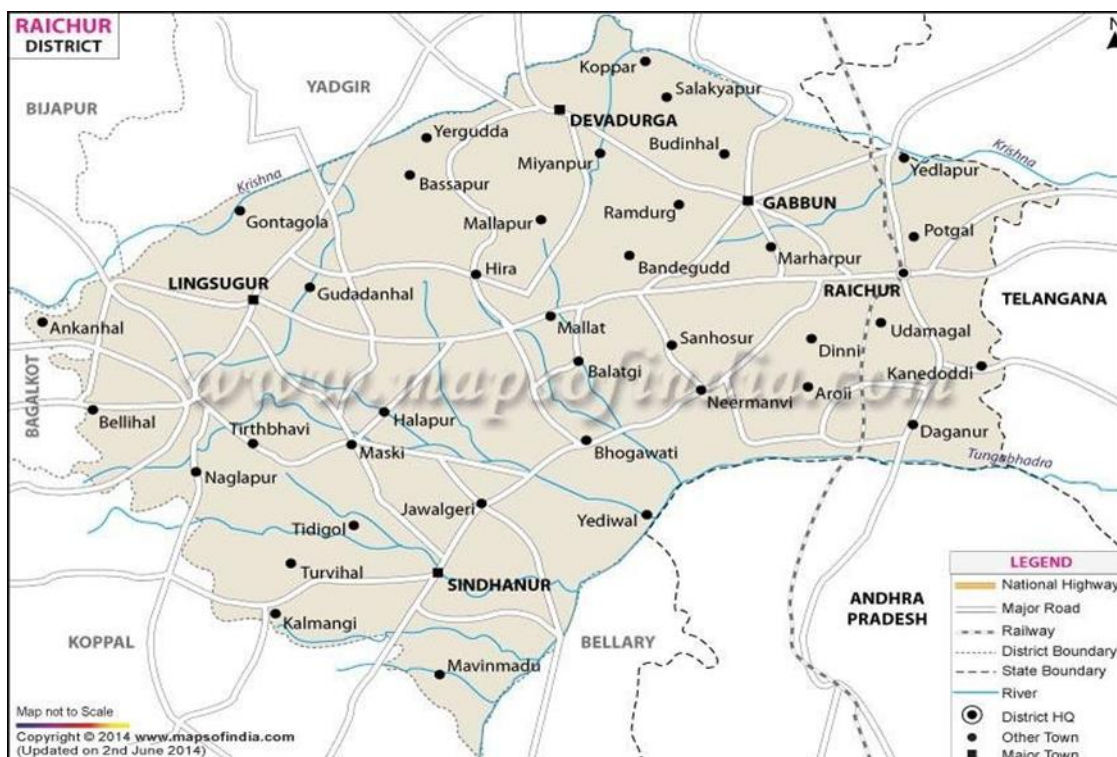
The proposed monitoring period (01/10/2019 to 30/06/2022) of this monitoring report is covered in First & Second Crediting Periods as mentioned below:

Sl. No.	Crediting Period Number	CP Duration		MP Duration	
		From	To	From	To
1	First	05/08/2016	04/08/2021	01/10/2019	04/08/2021
2	Second	05/08/2021	04/08/2026	05/08/2021	30/06/2022

A.2. Location of project

Host Country: India
State: Karnataka
District: Raichur
Village: Khota, Hire Hesurur, Chikehesurur, Amaravathi, Basapur village/s

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



Location details of the WTGs are mentioned below:

SL NO	LOCATION	Latitude	Longitude
1	GLG211	16°7'37"N	76°37'44"E
2	GLG55	16°7'21"N	76°37'37"E
3	GLG186	16°7'57"N	76°37'18"E
4	GLG113	16°8'27"N	76°37'23"E
5	GLG208	16°8'13"N	76°37'17"E
6	GLG112	16°8'37"N	76°37'22"E
7	GLG111	16°8'47"N	76°37'21 E
8	GLG110	16°8'56"N	76°37'25"E
9	GLG109	16°9'5"N	76°37'24"E
10	GLG227	16°9'15"N	76°37'24"E
11	GLG56	16°7'5"N	76°37'38 E
12	GLG169	16°6'47"N	76°37'31 E
13	GLG223	16°6'30"N	76°37'6" E
14	GLG148	16°6'21"N	76°37'5" E
15	GLG171	16°6'0"N	76°37'3" E
16	GLG165	16°5'46"N	76°37'6" E
17	GLG221	16°5'29"N	76°37'15 E
18	GLG160	16°5'16"N	76°37'10 E
19	GLG152	16°5'1"N	76°37'1" E
20	GLG207	16°4'52"N	76°36'59" E

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 20.0²

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

Category: Approved Consolidated Methodology (ACM0002)

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

- Tool to calculate the emission factor for an electricity system³- Version 07.0 (EB 100, Annex 04)
- Tool for the demonstration and assessment of additionality⁴- Version 07.0.0 (EB 70, Annex 08)
- Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period, Version 03.0.1⁵

A.4. Crediting period of project

First Crediting Period of this project activity is from 05/08/2016 to 04/08/2021(both days are included). The Second Crediting Period is from 05/08/2021 to 04/08/2026(both days are included). This project activity has 5 years crediting period(2 times renewable).

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

³ <http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf>

⁴ <http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf>

⁵ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-11-v3.0.1.pdf>

SECTION B. IMPLEMENTATION OF PROJECT

B.1. Description of implemented project

The total installed capacity of the project is 40 MW, which comprises of 20 Wind Turbine Generators (WTGs) in Karnataka. The WTGs used in the project activity are of Gamesa Wind Turbines Private Limited.

Technical specifications of WTG model: Gamesa make G-97/2000 kW

Particulars	Details
WTG Make	Gamesa Wind Turbines Private Limited
Rated Power	2000 KW
Cut-in-wind speed	3 m/s
Cut-out wind speed	25 m/s
Rotor Diameter	97 m
Operational range of Rotor Speed	9.83 – 17.79 rpm
Turbine type	Horizontal axis turbine with variable rotor speed
Gear Box Type	Planetary helical gearbox
Hub Height	104 m
Orientation	Up-wind
No. of blades	3
Blade material	Fibre glass epoxy reinforced
Braking	Active Hydraulic Brake
Rated wind speed	~ 10.5 m/s
Tower	104 m

Technical lifetime of the WTGs is 25 years⁶.

The commissioning details is shared below:

WTG ID	Date of Commissioning
GKL-11,12,13,14,15,16,17,18,19,20	31/12/2015
GKL-21,22,23,24,25,26,27,28,29,30	31/12/2015

B.1.1 Forward Action Requests

No Forward Action Requests from Design Certification or previous Performance Certification is applicable.

B.2. Post-Design Certification changes

Not Applicable during the current monitoring period. There are no post-design certification changes for this project.

⁶ As per standard industry practice.

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

Not Applicable during the current monitoring period. There are no temporary deviations in the monitoring & reporting plan, methodology or standardized baseline of the project.

B.2.2. Corrections

Not Applicable during the current monitoring period. There are no corrections.

B.2.3. Changes to start date of crediting period

There is no change in start date of crediting period.

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

Not Applicable during the current monitoring period. There are no permanent changes from the design certified monitoring plan, applied methodology or applied standardized baseline of this project.

B.2.5. Changes to project design of approved project

Not Applicable during the current monitoring period. There are no changes to project design of the approved project.

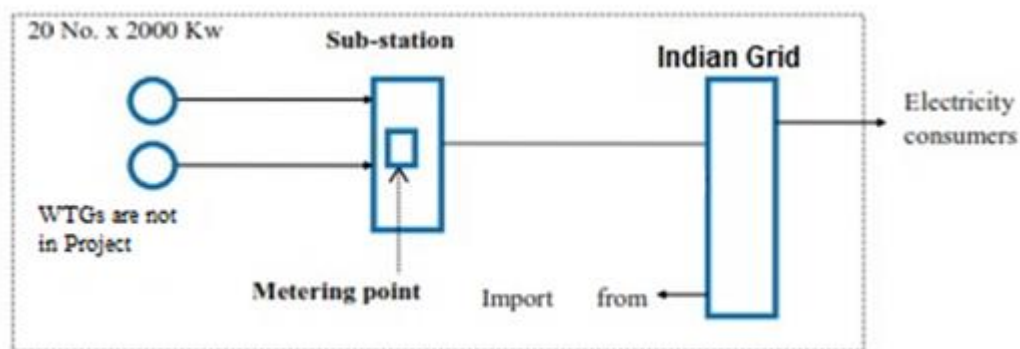
SECTION C. DESCRIPTION OF MONITORING SYSTEM APPLIED BY THE PROJECT

The monitoring team includes PP's employees and O&M contractor's representatives.

Net electricity supplied by the project activity to the grid is calculated from values of form B. Calculated results is cross-checked with records for sold electricity. The JMR is usually taken once in month for the bulk/ revenue meter at the common substation as well as at feeder meters. Transmission losses are derived between feeders and substation. JMR gives electricity export, electricity import and losses till metering point at feeders. By using these data net export by the WTGs in the project activity is calculated (as in some case net export is not explicitly reported in JMR).

The project adhere to all mandatory regulatory and statutory requirements at the state as well as national level. The energy meters installed are tri-vector meters of 0.2% accuracy class.

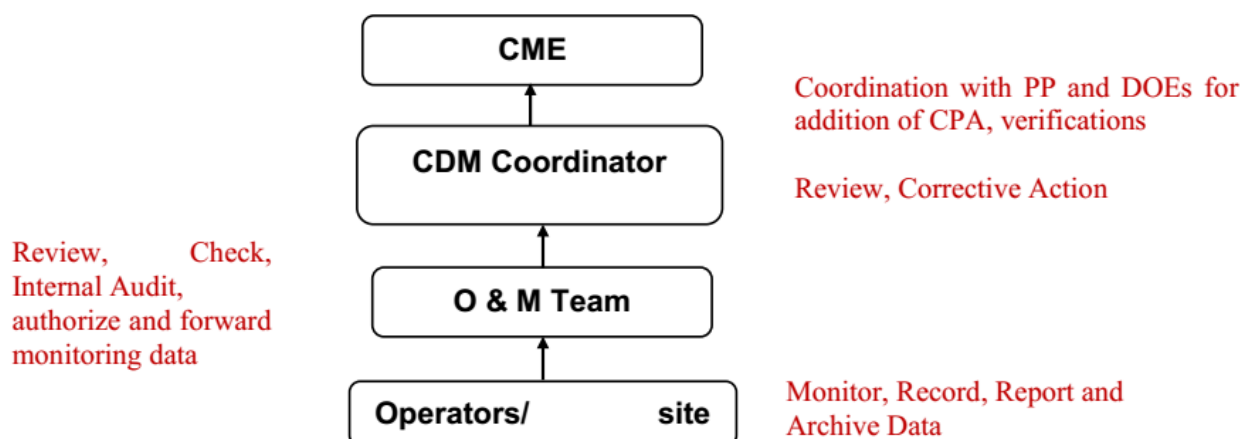
The metering location diagram of this project activity is shown below:



Metering: 10 WTGs are connected in one feeder (main and check meters) and 10 with other feeder (main and check meters) at 33 kV to monitor export and import values from WTG's, both are connected in KPTCL SS, where billing meters are installed for metering. Transmission losses are calculated between SS and feeders (as noted in form B) and net energy export is calculated by

=Export - Transmission loss -115% Import.

The operational and management structure implemented by PP and O&M contractor is as follows:



In some cases, if a particular feeder/ substation has other WTGs not part of this project activity connected through same electricity meter, apportioning is used. Even otherwise, to get WTG/ project owner wise electricity supplied to grid, apportioning is required and is carried out as below.

Apportioning Procedure

1. In case the start/end dates of monitoring period do not match with the start/end dates of Joint Meter Reading Sheets / Generation reports, following apportioning procedure will be applied for the first and the last monitoring period within a particular crediting period:

Apportioning will be carried out based on ratio of generation data recorded using LCS installed at the each WTG. The emission reductions of that particular period (between the start/end date of monitoring period and the end/start of the billing period) will be calculated based on percentage generation of that particular period at WTG using LCS data multiplied with the total units generated in the month as per the Joint Meter Reading Sheets / Generation report issued. The calculation formula has been furnished below:

Generation from all project WTGs for the period $y1 = EG_{WTGcontroller,i,y1}$

Generation from all project WTGs for the period $y2 = EG_{WTGcontroller,i,y2}$

Net energy supplied used for calculation of emission reduction for the monitoring period $y1$, i.e $EG_{facility,y1} =$

$$\sum_{i=1}^N ((EG_{export,i,y2} - EG_{import,i,y2}) * (EG_{WTGcontroller,i,y1} / EG_{WTGcontroller,i,y2}))$$

Where:

$y1$ = No. of days within a billing period up to which generation is considered for emission reduction calculation

$y2$ = No. of days in the billing period

N = No. of feeders to which project WTGs are connected to.

2. Apportioning is not required for meter reading in each month as the WTGs are connected through dedicated feeder. Non-project WTGs are not connected with the same feeder.

Impact of CP1 & CP2 on the Monitored Values:

As the monitoring period is covered in CP1 & CP2 of the project activity, the Emission Factor of 0.8970 & the Emission Factor of 0.9305 is used for CP1 & CP2 respectively.

Hence,

The number of Emission Reductions in CP1 comes out to be – 143,090 tCO₂e

The number of Emission Reductions in CP2 comes out to be – 65,703 tCO₂e

SECTION D. DATA AND PARAMETERS

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

SDG 13(Climate Action)

For First Crediting Period

Data/parameter	EF_{grid,OM,y}
Unit	tCO ₂ /MWh
Description	Operating Margin CO ₂ emission factor in year y
Source of data	Calculated from CEA database, Version 7, January 2012 ⁷
Value(s) applied	0.9515
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 2008-09, 2009-10 and 2010-11 of Southern Grid. The data is obtained from "CO ₂ Baseline Database for Indian Power Sector" version 7, 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.

Data/parameter	EF_{grid,BM,y}
Unit	tCO ₂ /MWh

⁷ <https://cea.nic.in/cdm-co2-baseline-database/?lang=en>

Description	Build Margin CO ₂ emission factor in year y
Source of data	Calculated from CEA database, Version 7, January 2012 ⁸
Value(s) applied	0.7339
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 2010-11 of Southern Grid. The data is obtained from "CO ₂ Baseline Database for Indian Power Sector" version 7, 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.

Data/parameter	EF_{grid,CM,y}
Unit	tCO ₂ /MWh
Description	Combined Margin CO ₂ emission factor in year y
Source of data	Calculated from CEA database, Version 7, October 2012 ⁹
Value(s) applied	0.8970
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%

⁸ <https://cea.nic.in/cdm-co2-baseline-database/?lang=en>

⁹ <https://cea.nic.in/cdm-co2-baseline-database/?lang=en>

	W_{BM} = Weighting of build margin emissions factor (%) = 25%
Purpose of data	For the calculation of the Baseline Emission
Additional comment	This parameter is fixed ex-ante for the entire crediting period.

For Second Crediting Period

Data/parameter	EF_{grid,OM,y}
Unit	tCO ₂ /MWh
Description	Operating Margin CO ₂ emission factor in year y
Source of data	Calculated from CEA database, Version 17, October 2021 ¹⁰
Value(s) applied	0.9522
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 2018-19, 2019-20 and 2020-21. The data is obtained from "CO ₂ Baseline Database for Indian Power Sector" version 17, 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.

Data/parameter	EF_{grid,BM,y}
Unit	tCO ₂ /MWh
Description	Build Margin CO ₂ emission factor in year y

¹⁰ https://cea.nic.in/wp-content/uploads/tpe_cc/2022/02/User_Guide_ver_17_2021.pdf

Source of data	Calculated from CEA database, Version 17, October 2021 ¹¹
Value(s) applied	0.8653
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 2020-21. The data is obtained from "CO ₂ Baseline Database for Indian Power Sector" version 17, 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.

Data/parameter	EF_{grid,CM,y}
Unit	tCO ₂ /MWh
Description	Combined Margin CO ₂ emission factor in year y
Source of data	Calculated from CEA database, Version 17, October 2021 ¹²
Value(s) applied	0.9305
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%

¹¹ https://cea.nic.in/wp-content/uploads/tpe_cc/2022/02/User_Guide_ver_17_2021.pdf

¹² https://cea.nic.in/wp-content/uploads/tpe_cc/2022/02/User_Guide_ver_17_2021.pdf

Purpose of data	For the calculation of the Baseline Emission
Additional comment	This parameter is fixed ex-ante for the entire crediting period.

D.2 Data and parameters monitored

SDG 13 (Indicators 13.2.1)

Data / Parameter	ER_y																				
Unit	tCO ₂ e/year																				
Description	Emission reductions achieved per year																				
Source of data	ER Sheet																				
Value(s) applied	208,793 tCO₂e <table> <tr> <th>Year</th><th>tCO₂e</th></tr> <tr> <td>2019</td><td>10,906</td></tr> <tr> <td>2020</td><td>77,483</td></tr> <tr> <td>2021</td><td>82,380</td></tr> <tr> <td>2022</td><td>38,024</td></tr> <tr> <td>Total</td><td>208,793</td></tr> </table> Crediting Period wise break up is given below: <table> <tr> <th>Period</th><th>Emission Reduction (tCO₂e)</th></tr> <tr> <td>CP1(01/10/2019 to 04/08/2021)</td><td>143,090</td></tr> <tr> <td>CP2(05/08/2021 to 30/06/2022)</td><td>65,703</td></tr> <tr> <td>Total</td><td>208,793</td></tr> </table>	Year	tCO ₂ e	2019	10,906	2020	77,483	2021	82,380	2022	38,024	Total	208,793	Period	Emission Reduction (tCO ₂ e)	CP1(01/10/2019 to 04/08/2021)	143,090	CP2(05/08/2021 to 30/06/2022)	65,703	Total	208,793
Year	tCO ₂ e																				
2019	10,906																				
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CP1(01/10/2019 to 04/08/2021)	143,090																				
CP2(05/08/2021 to 30/06/2022)	65,703																				
Total	208,793																				
Measurement methods and procedures	The baseline emissions are the product of electrical energy baseline EG _{facility, y} expressed in MWh of electricity produced by the renewable generating unit multiplied by an emission factor.																				
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.																				

SDG 7 (Indicators 7.2.1)

Data / Parameter	EG_{facility, y}
Unit	MWh/year

Description	Quantity of net electricity generation supplied by the project plant/unit in year y in MWh																		
Source of data	Joint meter reading OR break up sheet provided by power purchaser (referred as 'Form B')																		
Value(s) applied	230,149.034 Crediting Period wise break up is shown below: <table><tr><th>Period</th><th>Net Generation(MWh)</th></tr><tr><td>CP1(01/10/2019 to 04/08/2021)</td><td>159,534.079</td></tr><tr><td>CP2(05/08/2021 to 30/06/2022)</td><td>70,614.956</td></tr><tr><td>Total</td><td>230,149.034</td></tr></table>	Period	Net Generation(MWh)	CP1(01/10/2019 to 04/08/2021)	159,534.079	CP2(05/08/2021 to 30/06/2022)	70,614.956	Total	230,149.034										
Period	Net Generation(MWh)																		
CP1(01/10/2019 to 04/08/2021)	159,534.079																		
CP2(05/08/2021 to 30/06/2022)	70,614.956																		
Total	230,149.034																		
Measurement methods and procedures	The JMR is usually taken once in month for the bulk/ revenue meter at the common substation as well as at feeder meters. Transmission losses are derived between feeders and substation. JMR gives electricity export, electricity import and losses till metering point at feeders. By using these data net export by the WTGs in the project is calculated (as in some case net export is not explicitly reported in JMR). Measurement by: electricity meters at feeders Recording: Electronic and paper Recording Frequency: Continuous monitoring and monthly recording Responsibility: The operators/ O&M team is responsible for measurement Calibration Testing Frequency: Annually Accuracy class of meters: 0.2s/ (as per state regulation) Archiving: Crediting Period + 2 years Meter details are shown below: <table><tr><th>Meter Location</th><th>Meter No.</th><th>Type of Meter</th><th>Accuracy Class</th></tr><tr><td rowspan="2">Feeder 1</td><td>18068227</td><td>Main Meter</td><td>0.2</td></tr><tr><td>18068230</td><td>Check Meter</td><td>0.2</td></tr><tr><td rowspan="2">Feeder 2</td><td>18068218</td><td>Main Meter</td><td>0.2</td></tr><tr><td>18068254</td><td>Check Meter</td><td>0.2</td></tr></table> Meter calibration details are given Annexure 1 of Monitoring Report.	Meter Location	Meter No.	Type of Meter	Accuracy Class	Feeder 1	18068227	Main Meter	0.2	18068230	Check Meter	0.2	Feeder 2	18068218	Main Meter	0.2	18068254	Check Meter	0.2
Meter Location	Meter No.	Type of Meter	Accuracy Class																
Feeder 1	18068227	Main Meter	0.2																
	18068230	Check Meter	0.2																
Feeder 2	18068218	Main Meter	0.2																
	18068254	Check Meter	0.2																
Monitoring frequency	Continuous measurement & monthly recording																		
QA/QC procedures	Cross check measurement results with records for sold electricity – where electricity sale is applicable. For meters, calibration is performed annually to check meter accuracy class.																		
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 VERs for this project activity, whichever occurs later.
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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/ DOE interview with employees, local stakeholders etc				
Value(s) applied	Total employment opportunities generated during the current monitoring period is 47.				
	Further, below is the breakup of employment generated during the monitoring period.				
	Year	Skilled	Semi Skilled	Unskilled	Total
	2019	2	5	3	10
	2020	1	5	5	11
	2021	2	7	7	16
2022	2	7	1	10	
Value(s) applied	Four unskilled female staffs were employed during the current monitoring period.				
	Crediting Period wise break up is show below:				
	Period		Employment Generated		
	CP1(01/10/2019 to 04/08/2021)		28		
	CP2(05/08/2021 to 30/06/2022)		19		
	Total		47		
Measurement methods and procedures	The total number of persons working in the plant is checked from the daily attendance sheet 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, etc. Also				

	it is ensured that people gets equal payment for equal work. The payment is based on work and no any gender inequality for payment for work of equal value”. The average hourly earnings of a person is calculated by considering 8 hours per day working as per Indian standards and is depicted below. In this project activity, the minimum monthly wages for a semi skilled worker is INR 19,500. Thus the hourly wage is = $19,500/(30*8) = \text{INR } 81.25$. The hourly wages can be checked from the notification from the order published by the Chief Labour Commissioner (Central)¹³. As per the notification from Chief Labour Commissioner, for semi-skilled workers working in B Category of cities, the daily wage is 625, and accordingly the average hourly earnings come out to be INR 78.12. Thus, it can be justified that, PP is providing the employees/workers with salary/wages higher than the minimum wages as determined by the minimum wages order published by Chief Labour Commissioner (Central). The same can be checked from the salary slips provided. Also, as India is a member of International Labour Organization(ILO), project developer maintains the standards set by ILO¹⁴.
Monitoring frequency	Monthly monitoring and annual compilation
QA/QC procedures	The number of persons employed is mentioned in the plant register/Employment Contract, which can be crossed 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 comment	-

SDG 8 (Indicators 8.6.1)

Data / Parameter	Quality of Employment
Unit	-

¹³ <https://clc.gov.in/clc/min-wages>

¹⁴ <https://www.ilo.org/global/standards/introduction-to-international-labour-standards/lang--en/index.htm>

Description	Number of trainings provided per year																		
Source of data	Plant records or the training records for all the employees / DOE interview with employees, etc.																		
Value(s) applied	During the current monitoring period, a total of 30 trainings were conducted. The training details are shown below: <table> <tr> <th>Year</th><th>Training</th></tr> <tr> <td>2019</td><td>WTG & Substation Maintenance – 1 No.</td></tr> <tr> <td>2020</td><td>Electrical Safety – 1 No. Supply Change Management – 1 No.</td></tr> <tr> <td>2021</td><td>LOTO Awareness – 1 No. Road Safety -1 No. Emergency Handling Tips - 1 No. Site Safety – 2 Nos. Equipment Inspection -1 No. Energy Isolation – 1 No. Snake Bite Training -1 No.</td></tr> <tr> <td>2022</td><td>COVID-19 Awareness – 1 No. Site Induction – 2 Nos. Road Safety -1 No. Fire Fighting – 1 No. HSE Training -1 No. Site Safety – 3 Nos. Emergency Response Plan – 1 No. Equipment Operation Training – 1 No. Work at Height – 1 No. Incident Sharing – 3 Nos. Electrical Safety – 2 Nos. Work Permit Awareness – 1 No. Energy Isolation – 1 No.</td></tr> </table> Crediting Period wise break up is show below: <table> <tr> <th>Period</th><th>Training Conducted</th></tr> <tr> <td>CP1(01/10/2019 to 04/08/2021)</td><td>4</td></tr> <tr> <td>CP2(05/08/2021 to 30/06/2022)</td><td>26</td></tr> <tr> <td>Total</td><td>30</td></tr> </table>	Year	Training	2019	WTG & Substation Maintenance – 1 No.	2020	Electrical Safety – 1 No. Supply Change Management – 1 No.	2021	LOTO Awareness – 1 No. Road Safety -1 No. Emergency Handling Tips - 1 No. Site Safety – 2 Nos. Equipment Inspection -1 No. Energy Isolation – 1 No. Snake Bite Training -1 No.	2022	COVID-19 Awareness – 1 No. Site Induction – 2 Nos. Road Safety -1 No. Fire Fighting – 1 No. HSE Training -1 No. Site Safety – 3 Nos. Emergency Response Plan – 1 No. Equipment Operation Training – 1 No. Work at Height – 1 No. Incident Sharing – 3 Nos. Electrical Safety – 2 Nos. Work Permit Awareness – 1 No. Energy Isolation – 1 No.	Period	Training Conducted	CP1(01/10/2019 to 04/08/2021)	4	CP2(05/08/2021 to 30/06/2022)	26	Total	30
Year	Training																		
2019	WTG & Substation Maintenance – 1 No.																		
2020	Electrical Safety – 1 No. Supply Change Management – 1 No.																		
2021	LOTO Awareness – 1 No. Road Safety -1 No. Emergency Handling Tips - 1 No. Site Safety – 2 Nos. Equipment Inspection -1 No. Energy Isolation – 1 No. Snake Bite Training -1 No.																		
2022	COVID-19 Awareness – 1 No. Site Induction – 2 Nos. Road Safety -1 No. Fire Fighting – 1 No. HSE Training -1 No. Site Safety – 3 Nos. Emergency Response Plan – 1 No. Equipment Operation Training – 1 No. Work at Height – 1 No. Incident Sharing – 3 Nos. Electrical Safety – 2 Nos. Work Permit Awareness – 1 No. Energy Isolation – 1 No.																		
Period	Training Conducted																		
CP1(01/10/2019 to 04/08/2021)	4																		
CP2(05/08/2021 to 30/06/2022)	26																		
Total	30																		
Measurement methods and procedures	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.																		

Monitoring frequency	Annual
QA/QC procedures	The training records for all the employees
Purpose of data	To Monitor the SDG 8 Indicator
Additional comment	-

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

Data/Parameter	Value obtained in this monitoring period	Value obtained last monitoring period
NA	NA	NA

D.4. Implementation of sampling plan

There is no sampling plan used for this project activity.

SECTION E. CALCULATION OF SDG IMPACTS

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

The baseline estimate for SDG 7 and SDG 8 is zero as in the absence of project activity no power would be generated and no employment would be generated.

SDG 13: Climate Action

For the current monitoring period, the emission reductions contributed by the project activity (ER_y) is calculated as follows (Please refer "Summary" sheet of ER Sheet):

For the period covered in CP1:

$$BE_y = EG_{\text{facility},y} * EF_{\text{grid},CM,y}$$

Where:

BE_y	=	Baseline emissions in year y (t CO ₂)
$EG_{\text{facility},y}$	=	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y in MWh
$EF_{\text{grid},CM,y}$	=	Combined margin CO ₂ emission factor for grid connected power generation in year y

$$BE_y = 159,534.079 \text{ MWh} \times 0.8970 \text{ tCO}_2/\text{MWh}$$

$$= 143,090 \text{ tCO}_2\text{e (Round down value)}$$

For the period covered in CP2:

$$BE_y = EG_{\text{facility},y} * EF_{\text{grid},CM,y}$$

Where:

BE_y	=	Baseline emissions in year y (t CO ₂)
$EG_{\text{facility},y}$	=	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y in MWh
$EF_{\text{grid},CM,y}$	=	Combined margin CO ₂ emission factor for grid connected power generation in year y

$$BE_y = 70,614.956 \text{ MWh} \times 0.9305 \text{ tCO}_2/\text{MWh}$$

$$= 65,703 \text{ tCO}_2\text{e (Round down value)}$$

$$\text{Total Baseline emission in this monitoring period} = 143,090 \text{ tCO}_2\text{e} + 65,703 \text{ tCO}_2\text{e}$$

$$= 208,793 \text{ tCO}_2\text{e.}$$

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 generation contributed by the project activity is 230,149.034 MWh (Please refer "Lingasugur" sheet of ER Sheet).

$$\text{Generation in CP1} = 159,534.079 \text{ MWh}$$

$$\text{Generation in CP2} = 70,614.956 \text{ MWh}$$

SDG 8: Decent Work and Economic Growth

The project leads to employment opportunities which would not have been possible in the baseline scenario. During the current monitoring period, the project activity provided employment to 47 persons(Please refer "Result of SDG Parameter" sheet of ER Sheet).

Also project activity improves the quality of employment by giving training to employee. During the current monitoring period, 30 trainings has been conducted(Please refer "Result of SDG Parameter" sheet of ER Sheet).

SDG 13: Climate Action

SDG 13 project estimate is zero as this is a renewable project activity.

E.3. Calculation of leakage

This is not Applicable as per the consolidated methodology ACM0002 v20.

So, $LE_y = 0tCO_2e$.

So, emission reduction in current monitoring period is,

$$ER_y = BE_y - PE_y - LE_y$$

Where:

- ER_y = Emission reductions in year y (tCO_2e)
- BE_y = Baseline emissions in year y (tCO_2e)
- PE_y = Project emissions in year y (tCO_2e)
- LE_y = Leakage emissions in year y (tCO_2e)

Therefore,

$$\begin{aligned} ER_y &= 208,793 - 0 - 0 \\ &= 208,793 tCO_2e. \end{aligned}$$

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	208,793 tCO_2e	-	208,793 tCO_2e
7	Affordable and Clean Energy	-	230,149.034 MWh	230,149.034 MWh
8	Decent Work and Economic Growth	-	No. of Employment Opportunities created: 47 No. of trainings conducted: 30	No. of Employment Opportunities created: 47 No. of trainings conducted: 30

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 ¹⁵ achieved during this monitoring period																									
13	202,663 tCO ₂ e	208,793 tCO ₂ e																									
7	223,196.076 MWh	230,149.034 MWh																									
8	1 training/annum and employment to 10 persons/annum 3 training and 28 employment for this monitoring period	No. of Employment opportunities created: 47																									
		<table><tr><th>Year</th><th>Skilled</th><th>Semi Skilled</th><th>Unskilled</th><th>Total</th></tr><tr><td>2019</td><td>2</td><td>5</td><td>3</td><td>10</td></tr><tr><td>2020</td><td>1</td><td>5</td><td>5</td><td>11</td></tr><tr><td>2021</td><td>2</td><td>7</td><td>7</td><td>16</td></tr><tr><td>2022</td><td>2</td><td>7</td><td>1</td><td>10</td></tr></table>	Year	Skilled	Semi Skilled	Unskilled	Total	2019	2	5	3	10	2020	1	5	5	11	2021	2	7	7	16	2022	2	7	1	10
		Year	Skilled	Semi Skilled	Unskilled	Total																					
		2019	2	5	3	10																					
		2020	1	5	5	11																					
		2021	2	7	7	16																					
2022	2	7	1	10																							
No. of trainings conducted: 30																											

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

SDG 7: Affordable and Clean Energy

The annual estimated power generation for the project activity is 81,142 MWh, thus considering number of days covered during present monitoring period to be 1004, the estimated power generation will be 223,196.076 MWh.

SDG 8: Decent Work and Economic Growth

The project leads to employment opportunities which would not have been possible in the baseline scenario. The project provides employment to at least 10 persons per year. Taking the Monitoring Period is of 1,004 days, the estimated number of employment for this monitoring period is 28.

Also project activity improves the quality of employment by giving training to employee. Thus, minimum 1 training per year will be conducted by the project activity. Taking the Monitoring Period is of 1,004 days, the estimated number of training for this monitoring period is 3.

¹⁵ 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 13: Climate Action

The annual estimated emission reduction for the project activity is 72,784 tCO₂e for CP1 & 75,502 tCO₂e for CP2 respectively, thus considering number of days covered during present monitoring period to be 1004(674 days for CP1 and 330 days for CP2), the estimated emission reduction contributing towards SDG 13 will be 202,663 tCO₂e.

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

SDG 7 and SDG 13:

A total of 3.12% higher generation and 3.02% higher emission reduction achieved with respect to estimated values. The generation is nature dependent and it varies based on wind conditions and PP do not have any control on it. The increase in actual emission reductions does not have any impact on additionality of project since it doesn't cross the breaching value.

SDG 8:

Number of training and employment figure is slightly higher, which is conservative.

SECTION F. SAFEGUARDS REPORTING

Environmental Safeguard

Data / Parameter	Noise and Shadow Flickering
Unit	-
Description	The noise and shadow produced due to operation of wind power plant respect to nearest residential spot
Source of data	Grievance Register
Value(s) applied	0
Measurement methods and procedures	Manual
Monitoring frequency	Once in First Monitoring Period
QA/QC procedures	-
Purpose of data	Analysis of safeguarding principle
Additional comment	-

Data / Parameter	Waste Oil Disposal
Unit	m ³
Description	Waste oil due to operation and Construction work of plant
Source of data	Plant Log Book
Value(s) applied	0

Measurement methods and procedures	Manual
Monitoring frequency	Once in a Monitoring Period
QA/QC procedures	-
Purpose of data	Analysis of safeguarding principle
Additional comment	-

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 grievances register is placed at site and is being continuously monitored and if any comments are received, they are addressed through the grievance cell.

During the current monitoring period, there were no comments/feedbacks received in the grievance register.

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.

Annexure 1: Meter Calibration Details

Meter Location	Meter No.	Type of Meter	Accuracy Class	Calibration Date	Validity of Calibration	Delay in Calibration
Feeder-1	18068227	Main Meter	0.2	15/09/2019	14/09/2020	No Delay
				08/08/2020	07/08/2021	
				21/03/2021	20/03/2022	
				27/11/2021	26/11/2022	
	18068230	Check Meter	0.2	15/09/2019	14/09/2020	
				08/08/2020	07/08/2021	
				21/03/2021	20/03/2022	
				27/11/2021	26/11/2022	
Feeder-2	18068218	Main Meter	0.2	15/09/2019	14/09/2020	No Delay
				08/08/2020	07/08/2021	
				21/03/2021	20/03/2022	
				27/11/2021	26/11/2022	
	18068254	Check Meter	0.2	15/09/2019	14/09/2020	
				08/08/2020	07/08/2021	
				21/03/2021	20/03/2022	
				27/11/2021	26/11/2022	

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