Gold Standard
for the Global Goals

TEMPLATE

MONITORING REPORT

PUBLICATION DATE **14.10.2020**

VERSION **v. 1.1**

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

This document contains the following Sections

KEY PROJECT INFORMATION

Key Project Information

GS ID (s) of Project (s)	GS7746
Title of the project (s) covered by monitoring report	West Huaybong 3 wind farm project
Version number of the PDD/VPA-DD (s) applicable to this monitoring report	Version 5
Version number of the monitoring report	03
Completion date of the monitoring report	12/08/2025
Date of project design certification	NA
Date of Last Annual Report	NA
Monitoring period number	2
Duration of this monitoring period	01/11/2021 to 31/12/2023 (both days are included)
Project Representative	Kosher Climate India Private Limited
Host Country	Thailand
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: Consolidated baseline methodology for grid-connected electricity generation from renewable sources, Version 20
Product Requirements applied	☒ GHG Emissions Reduction & Sequestration ☐ Renewable Energy Label ☐ N/A

Table 1 - Sustainable Development Contributions Achieved

Sustainable Development Goals Targeted	SDG Impact	Amount Achieved	Units/ Products
13 Climate Action (mandatory)	GHG Emission Reduction	241,701	tCO_2e
3 Good Health and Well Being	Community development activities undertaken	06	Nos
7 Affordable and Clean Energy	Quantity of net electricity supplied to the grid	424,635	MWh
8 Decent Work and Economic Growth	Jobs created	28	Nos
	Number of trainings	10	Nos

Table 2 – Product Vintages

		Amount Achieved			
Start Dates	**End Dates**	**SDG-13**	**SDG-7**	**SDG-3**	**SDG-8**
01/11/2021	31/12/2021	31,498 tCO_2e	55,338 MWh	0 Nos	28 Jobs 0 Training
01/01/2022	31/12/2022	94,463 tCO_2e	165,958 MWh	05 Nos	28 Jobs 07 Training
01/01/2023	31/12/2023	1,15,740 tCO_2e	203,339 MWh	01 Nos	28 Jobs 03 Training

SECTION A. DESCRIPTION OF PROJECT

A.1. General description of project

The purpose of the First Korat Wind Company with this project activity is to construct a large scale commercial wind farm in Thailand to supply clean renewable electricity to the Thailand grid. The scenario existing prior to the start of the project, which is the same as the baseline scenario, is the supply of electricity from power plants connected to the grid. The project consists of 45 turbines 2.3 MW capacity with the total installed capacity of 103.5 MW. A wind resource and energy yield assessment performed at the project site predicts that it will yield an annual electricity production of 232.5 GWh. The project has been commissioned on 14th November 2012

It shall be noted that the project is already registered under CDM and the registration details are given below:
Project title: West Huaybong 3 wind farm project
Reference number: 7474
Registration Date: 29/10/2012
1st Crediting period: 01/12/2012 – 30/11/2019
We blink: https://cdm.unfccc.int/Projects/DB/RWTUV1348727249.16/view
The project is also registered under Gold Standard as GS-CER project (Design certification date 29/04/2021) and now seeking transition from GS-CER to VER project with the crediting period of 01/12/2019 – 30/11/2024.

Location:
The West Huaybong 3 wind farm project is located in Nakhon Ratchasima Province in the northeast of Thailand.

Project Milestone:
Start date of the project: 15th August 2011
CDM Stakeholder consultation: 15th September 2011
CDM Registration: 29th October 2012
Commissioning of project: 14th November 2012
Listing of the project in GS: 22nd June 2020
Online SFR: 6th July 2020 to 5th September 2020
GS Design Certification Date: 29th April 2021

Date of transition approval: NA (Transition ongoing)
1st Crediting period under GS- 01st December 2019 – 30th November 2024
1st monitoring period in GS: 01st December 2019 to 31st October 2021
2nd monitoring report in GS: 01st November 2021 to 31st December 2023

How the proposed activity reduces GHG emissions

The project generates electrical energy through sustainable means without causing any negative impact on environment. Use of renewable sources for power generation contributes to mitigation of greenhouse gases emissions. Since wind power is Greenhouse Gas (GHG) emissions free, the power generated will prevent the anthropogenic gas emissions generated by fossil fuel based thermal power stations comprising coal, diesel, furnace oil and gas. Hence, the generation by the proposed activity is non-GHG source and thus reduces the proportion of fossil fuel based generation in the grid leading to lesser carbon intensive grid.

Scenario existing prior to the implementation of project activity:

There was no activity at the site prior to implementation of the project activity. Hence the scenario existing prior to the project activity is same as baseline scenario which is continual use of highly carbon intensive electricity in the Thailand national grid.

Baseline Scenario:

As the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline scenario is the following as per applied methodology: 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, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system". Hence, pre-project scenario and baseline scenario are the same.

Emission reduction for the monitoring period:

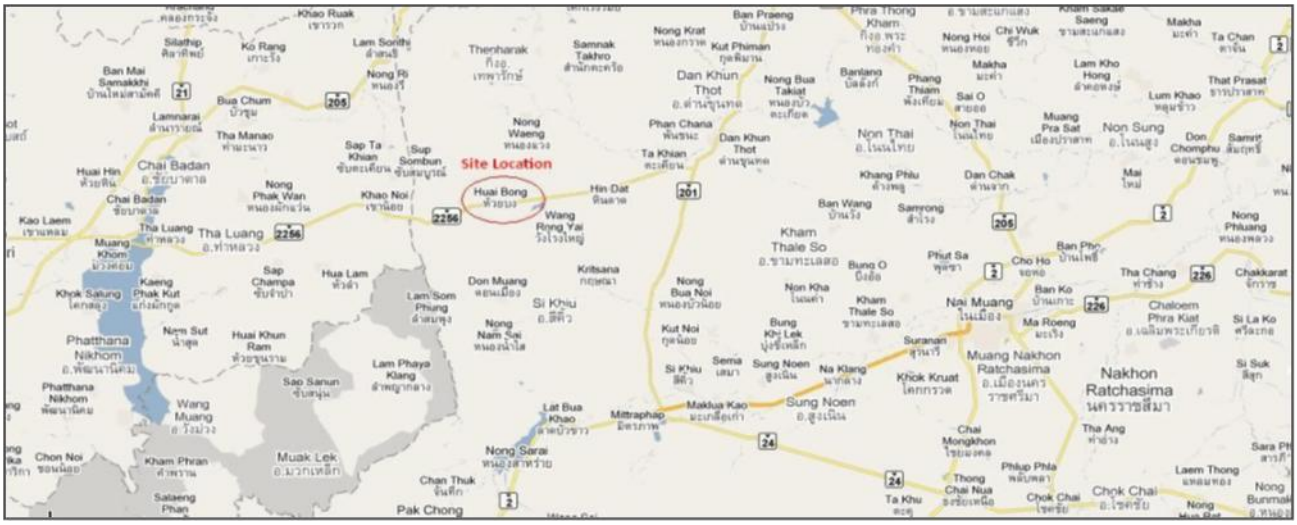
The actual emission reduction achieved during the present monitoring period (ie, 01/11/2021 to 31/12/2023) is 241,701 tCO_2e.

A.2. Location of project

Tambol Huaybong of Amphur Dan Khun Thot and Tambol Nong Wang of Amphur Teparak, Nakhon Ratchasima Province, Thailand.

The physical location of the wind farm is located within Tambol Huaybong of Amphur Dan Khun Thot and Tambol Nong Wang of Amphur Teparak, of Nakhon Ratchasima Province. Please refer to the figure given below for more detail.

Nominal GPS co-ordinates for the project site are: N 15°12“ 24.18”, E 101°27“ 38.71”.



The coordinates of individual WTGs are given below:

No	WTG	Latitude (°N)	Longitude (°E)
1	01B	15.1798	101.4406
2	02B	15.1820	101.4398
3	03B	15.1850	101.4407
4	04B	15.1808	101.4478
5	05B	15.1782	101.4580
6	06B	15.1804	101.4567
7	07B	15.1831	101.4557
8	08B	15.1860	101.4539
9	09B	15.1885	101.4532
10	10B	15.1906	101.4525
11	11B	15.1934	101.4529
12	12B	15.2034	101.4297
13	13B	15.2034	101.4353
14	14B	15.2061	101.4361
15	15B	15.2079	101.4339
16	16B	15.2106	101.4287
17	17B	15.2106	101.4341

18	18B	15.2140	101.4320
19	19B	15.2172	101.4334
20	20B	15.2195	101.4327
21	21B	15.2215	101.4393
22	22B	15.2240	101.4342
23	23B	15.2244	101.4388
24	24B	15.2282	101.4372
25	25B	15.2059	101.4675
26	26B	15.2079	101.4663
27	27B	15.2097	101.4639
28	28B	15.2304	101.4488
29	29B	15.2321	101.4470
30	30B	15.2348	101.4479
31	31B	15.2006	101.4832
32	32B	15.2033	101.4829
33	33B	15.2068	101.4840
34	34B	15.2110	101.4867
35	35B	15.2118	101.4826
36	36B	15.2135	101.4808
37	37B	15.2159	101.4801
38	38B	15.2189	101.4815
39	39B	15.2221	101.4823
40	40B	15.2242	101.4800
41	41B	15.2266	101.4791
42	42B	15.2286	101.4773
43	43B	15.2312	101.4772
44	44B	15.2329	101.4761
45	45B	15.2353	101.4743

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 20.0[1])

A.4. Crediting period of project

Type of Crediting Period: Renewable

Start date of the crediting period: 01/12/2019

End date of the crediting period: 30/11/2024

Length of the current crediting period: 5 years

SECTION B. IMPLEMENTATION OF PROJECT

B.1. Description of implemented project

The West Huaybong 3 wind farm project produces renewable electricity for the Thailand national grid. Renewable electricity is generated by wind turbines exported to Thailand and installed in the North West of Nakhon Ratchasima Province. Prior to the project activity there was no equipment for generating electricity at the project site and the Thailand grid was comprised of a mixture of generation units which included fossil fuel fired power units. In the absence of the project activity, the Thailand grid would receive electricity from the existing grid-connected power plants and by the addition of new generation sources. The baseline scenario is the same as the scenario described above which existed prior to implementation of the project activity. The production of electricity in this way creates CO2 through the combustion of fossil fuels as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system". The CO_2 emissions from these baseline power plants are the only baseline emission source identified in section B.3 of the PDD. According to data published by the Thailand Greenhouse Gas Management Organisation (TGO), the Thailand grid produces 0.5692 tCO_2e per MWh of electricity produced

The wind farm is constructed on land administered by the Agricultural Land Reform Office. The project installed 45 individual 2.3MW Siemens SWT-2.3-101 turbines, which are based on a three blades horizontal axis turbine design and have a peak co-efficient

[1] https://cdm.unfccc.int/methodologies/DB/XP2LKUSA61DKUQC0PIWPGWDN8ED5PG

of power (cp) of 0.46. The Design Operational Life of the turbines is 20-years based on the design power curve. The planned operational life of the project is 23 years based on the assumption that the turbines will be operated beyond the technical lifetime of 20 years. A wind resource and energy yield assessment were performed at the project site which forecasts an annual electricity production of 232.5 GWh and a combined loss factor of 15.6% and a plant load factor of 25.64%. The quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the project activity will be monitored with electricity meters located at the point of connection to the grid. The electricity meters are installed and operated in accordance with the Power Purchase Agreement (PPA) signed with the Energy Generating Authority of Thailand (EGAT). In accordance with the PPA, primary and backup export meters will be installed, and the error specified by the meter manufacturer will not exceed +/- 0.2%. More details of the metering equipment are provided in section B.7. In accordance with section B.3 of the PDD, there are no project emissions associates with the project activity

Model No.	Capacity	Swept Area	Blade Length	Hub Height	Type
Siemens SWT-2.3-101	2.3 MW	8000 Sq. m	49m	80m	Horizontal Axis 3-Blades Turbine

B.1.1 Forward Action Requests

No Forward Action Requests received in Previous Performance Review.

B.2. Post-Design Certification changes

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

Details of Data to be Monitored:

The emission reductions achieved by the project will be monitored and calculated in accordance with the methodology ACM0002. The methodology defines the equations and monitoring parameters for calculating emission reductions. On-site data collection will involve metering the net electricity supplied by the project activity to the grid. Also, other SDG parameters and safeguarding principle parameters will be monitored. The parameters to be monitored are:

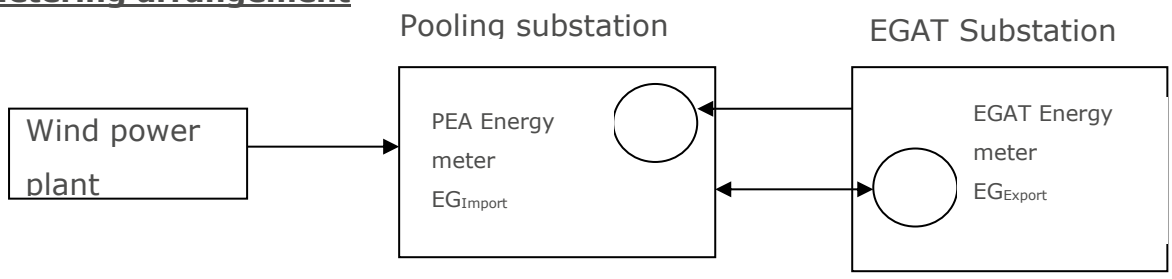
- Emission Reduction (calculated)
- Net electricity supplied to grid
- Number of community development activities undertaken
- Number of jobs created
- Number of Training conducted
- Soil Erosion mitigation measures
- Hazardous waste management

SDG 13:

GHG Emission reduction is a calculated value from SDG 7. Hence no monitoring procedure applicable.

SDG 7:

Metering arrangement



The energy meter details are given below:

Details	EGAT meter		PEA meter
	Main	Backup	
Serial No	96499384	96499385	228375226
Make	Landis & Gyr	Landis & Gyr	EDMI
Accuracy class	0.2s	0.2s	0.5s

Monitoring Procedure

Electricity exported to the grid will be monitored continuously with the electricity meters of the power authority. The electricity imported from grid will be measured through the import meter which owned by PEA.

Monthly records of export and import reading will be used to calculate the net electricity generation supplied by the project plant to the grid. Net electricity will be calculated as follows:

$EG_{facility,y} = EG_{facility,export,y} - EG_{facility,import,y}$

The monitoring procedures for all the parameters are provided in section B.7.1 above

Roles & responsibilities:

The project proponent has dedicated O&M Team for the operation and maintenance of WTGs. O&M Team will provide a monthly report, which includes generation data, major breakdown events and machine availability.

The project manager along with the representative of EGAT will be responsible for taking monthly reading at the export meter. The project manager will generate a monthly energy meter reading statement which will be signed by both the project manager & representative of EGAT. Project manager prepares electricity invoice as per the monthly energy meter reading statement and issued to EGAT.

Representative of PEA will take monthly import reading at the PEA energy meter and issue the electricity bill for the amount of electricity consumed by the project during the respective month.

All the data will be shared with carbon consultant annually or more frequently to calculate the actual emission reduction achieved during the respective year.

Data Management

Monthly meter readings will be conducted by the power authority. After receiving the receipt of power sales from the power authority, the meter data will be input into an electronic data file. West Huaybong 3 operations personnel will check the data file for consistency and completeness. At the end of the monitoring period, the entire data file will be printed and reviewed by the Responsible Manager. An electronic copy of the data file will be backed up in the West Huaybong 3 head office at least once per month

All other parameter data will be monitored by site in-charge and it will be submitted to responsible manager every year for review. After the review of data, it will be submitted to consultant to prepare the monitoring report.

Data recording & archiving

All the data will be recorded in electronic format and/or in the form of hard copy. All data collected as part of the monitoring process will be retained for at least two years after the end of the crediting period during which the data was recorded.

Quality Assurance

The following quality assurance measures will be taken relating to the monitoring equipment and its installation and operation:

- Prior to operation, the Responsible Manager will validate that the monitoring equipment is calibrated according to the appropriate standards.
- All monitoring equipment will be located in secure locations to prevent accidental damage
- Routine calibration of all monitoring equipment will be performed to ensure that the data remains accurate.

To ensure the quality of the recorded data, all relevant personnel will be trained in accordance with this monitoring plan.

Quality Control Procedures

To ensure malfunction is identified promptly, the operations personnel will check the data records and report any data outages or inconsistencies in the data to the Responsible Manager. Any equipment faults or loss of data will be recorded in an operational log with details of the fault and length of time over which data was affected. All meter data will be checked against the official receipts

In accordance with the PPA, the error specified by the manufacturer of the export meter will not exceed +/-0.2%. In case of meter failure, replacement export meters may be installed, and the error specified by the meter manufacturer will not exceed +/-0.2%. The meters will be calibrated once during each calendar year (the maximum time between two calibration events is 24 months).

SDG 3 (Livelihood of the poor):

PP undertakes number of community development activities in the nearby communities where the project is being implemented based on the requirement and budget availability. As and when community development activities are undertaken, the same is recorded and evidence such as photographs, letter from beneficiary etc are stored which will be submitted to verifying VVB.

SDG 8 (Number of jobs created):

As and when a new employment is created, the same are recorded in the employment record. The employment records (employment agreement/attendance sheet/any relevant document) will be submitted to VVB during verification.

SDG 8: (Number of Training conducted):

PP will conduct various training (Induction, technical, HSE etc) to the O&M team to improve their skills on technical, health & safety aspect of the wind power plant. As and when a training is conducted, the same is recorded. The training records (attendance sheet, photograph etc) will be submitted to verifying VVB during verification.

SECTION D. DATA AND PARAMETERS

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

SDG13

Data/parameter	**$EF_{grid,CM,y}$**
Unit	tCO_2/MWh
Description	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 version 7
Source of data	Thailand Greenhouse Gas Management Organisation (TGO), the Designated National Authority (DNA) of Thailand for 2016. http://ghgreduction.tgo.or.th/images/Grid_Emission_Factor_2559_-_Finalised.pdf
Value(s) applied	0.5692
Choice of data or Measurement methods and procedures	The combined margin CO2 emission factor for the Thailand grid is published by the DNA of Thailand. The data has been considered in accordance with the Tool to calculate emission factor of an electricity system. The tool guides to take 75% weightage of $EF_{grid,OMsimple}$, & 25% weightage of $EF_{grid,BM,y}$
Purpose of data	Baseline Emission calculation
Additional comment	The combined margin is calculated ex-ante and fixed for the entire crediting period

Data/parameter	$EF_{grid,BM,y}$
Unit	tCO_2/MWh
Description	The Build 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 version 7"
Source of data	Thailand Greenhouse Gas Management Organisation (TGO), the Designated National Authority (DNA) of Thailand for 2016 http://ghgreduction.tgo.or.th/images/Grid_Emission_Factor_2559_-_Finalised.pdf
Value(s) applied	0.5609
Choice of data or Measurement methods and procedures	Calculated in Report 'Thailand Grid Emission Factor for GHG Reduction Project/Activity' dated 28/09/2017 Published by Thailand Greenhouse Gas Management Organisation (Public

	Organisation) in line with "Tool to calculate the emission factor for an electricity system".
Purpose of data	Baseline Emission calculation
Additional comment	The Build Margin would be calculated ex ante and fixed during the crediting period. For ex ante calculation the most recent data (2016) available has been used and the build margin is thus calculated.
Data/parameter	$EF_{grid,OM,y}$
Unit	tCO_2/MWh
Description	Operating margin CO_2 emission factor for grid connected power generation inyear *y* calculated using the latest version of the "Tool to calculate the emission factor for an electricity system version 7"
Source of data	Thailand Greenhouse Gas Management Organisation (TGO), the Designated National Authority (DNA) of Thailand for 2016 http://ghgreduction.tgo.or.th/images/Grid_Emission_Factor_2559_-_Finalised.pdf
Value(s) applied	0.5719
Choice of data or Measurement methods and procedures	Calculated in Report 'Thailand Grid Emission Factor for GHG Reduction Project/Activity' dated 28/09/2017 Published by Thailand Greenhouse Gas Management Organisation (Public Organisation) in line with "*Tool to calculate the emission factor for an electricity system*". The value used is calculated ex-ante as generation based weighted average of last three years of the operating margin provided in the Thailand Grid Emission Factor for GHG Reduction Project/Activity' Weighted average $= \sum_{i=1 \text{ to } n}$ (Net generation in operating margin in year i * Simple operating margin in year i)/$\sum_{i= 1 \text{ to } n}$ (Net generation in operating margin of year i)
Purpose of data	Baseline Emission calculation

Additional comment	The operating margin emission factor is a 3-year generation-weighted average (2014, 2015 & 2016). The operating Margin is calculated ex ante and fixed during the crediting period

D.2 Data and parameters monitored

SDG 13:

Data/parameter:	Emission Reduction
Unit	tCO_2
Description	Emission reduction achieved during the monitoring period
Measured/calculated/default	Calculated
Source of data	ER calculation sheet
Value(s) of monitored parameter	**Vintage** / **Emission Reduction (tCO2)** 01/11/2021 to 31/12/2021 — 31,498 01/01/2022 to 31/12/2022 — 94,463 01/01/2023 to 31/12/2023 — 115,740 Total — 241,701
Monitoring equipment	NA
Measuring/reading/recording frequency:	Annual
Calculation method (if applicable):	Refer Section E below
QA/QC procedures:	NA
Purpose of data:	Monitoring of SDG 13 (Climate Action)
Additional comments:	NA

SDG 3

Data/parameter:	Livelihood of the poor
Unit	-

<table>
<tr><td>Description</td><td>Community Development Activities undertaken</td></tr>
<tr><td>Measured/calculated/default</td><td>Measured</td></tr>
<tr><td>Source of data</td><td>Community Development Activity records and photographic evidence</td></tr>
<tr><td>Value(s) of monitored parameter</td><td><table><tr><th>Vintage</th><th>Number of CSR activity</th></tr><tr><td>01/11/2021 to 31/12/2021</td><td>0</td></tr><tr><td>01/01/2022 to 31/12/2022</td><td>5</td></tr><tr><td>01/01/2023 to 31/12/2023</td><td>1</td></tr><tr><td>Total</td><td>6</td></tr></table>
The complete CSR activity list is given in the ER sheet. All the CSR records are submitted to VVB.</td></tr>
<tr><td>Monitoring equipment</td><td>No monitoring equipment involved
List of CSR activities undertaken are recorded as and when it is conducted</td></tr>
<tr><td>Measuring/reading/recording frequency:</td><td>Yearly Once</td></tr>
<tr><td>Calculation method (if applicable):</td><td>Manually by PP representative</td></tr>
<tr><td>QA/QC procedures:</td><td>The records of the development activities such as photographs, appreciation letter, memos etc. will be maintained by the PP</td></tr>
<tr><td>Purpose of data:</td><td>To monitor the contribution to SDG 3 (Ensure healthy lives and promote well-being for all at all ages)</td></tr>
<tr><td>Additional comments:</td><td>-</td></tr>
</table>

SDG 7:

Data/parameter:	$EG_{facility,y}$
Unit	MWh
Description	Quantity of net electricity supplied by the project plant to the grid
Measured/calculated/default	Calculated (based on the measured values of electricity exported and imported)

<table>
<tr><td>Source of data</td><td>Monitored at the project activity site with electricity meters and calculated by subtracting imported electricity from exported electricity.</td></tr>
<tr><td>Value(s) of monitored parameter</td><td>
<table>
<tr><th>Vintage</th><th>Net Generation (MWh) -as recoded</th><th>Net Generation (MWh) -After 0.2% error applied</th></tr>
<tr><td>01/11/2021 to 31/12/2021</td><td>55,338</td><td>55,338</td></tr>
<tr><td>01/01/2022 to 31/12/2022</td><td>165,963</td><td>165,958</td></tr>
<tr><td>01/01/2023 to 31/12/2023</td><td>203,345</td><td>203,339</td></tr>
<tr><td>Total</td><td>424,646</td><td>424,635</td></tr>
</table>
</td></tr>
<tr><td>Monitoring equipment</td><td>The electricity imported will be measured with electricity meter installed at installed at export line. A backup energy meter is installed and used to measure electricity exports if the primary meter fails. Electricity will be measured continuously and recorded monthly.
A separate grid connection is installed to enable electricity to be imported from the PEA. An energy meter (import meter) is installed at the import line to measure the electricity imported from grid. A backup meter is not installed on the import line. If the primary import meter on this import electricity line fails, the data for that month will be replaced with data from the month with the highest electricity consumption recorded during the monitoring period.

Net electricity will be calculated by subtracting total imported electricity from total exported electricity.</td></tr>
</table>

<table>
<tr><td></td><td>The details of the energy meters installed at site are given below:
<table>
<tr><th>Details</th><th colspan="2">Export meter</th><th>Import meter</th></tr>
<tr><th></th><th>Main</th><th>Backup</th><th></th></tr>
<tr><td>Serial No</td><td>96499384</td><td>96499385</td><td>22069212</td></tr>
<tr><td>Make</td><td>Landis & Gyr</td><td>Landis & Gyr</td><td>Elster</td></tr>
<tr><td>Accuracy class</td><td>0.2s</td><td>0.2s</td><td>0.5s</td></tr>
</table></td></tr>
<tr><td>Measuring/reading/recording frequency:</td><td>Measurement: Continuous
Recording: Monthly</td></tr>
<tr><td>Calculation method (if applicable):</td><td>The Net electricity supplied to the grid by the project activity will be calculated as a difference of electricity exported to the grid, electricity imported from the grid obtained from Monthly Meter reading reports provided by SEB as per below equation: $EG_{facility,y} = EG_{Export} - EG_{Import}$</td></tr>
<tr><td>QA/QC procedures:</td><td>Measurement results will be cross checked with records for sold electricity. In accordance with the PPA regarding the export meter, the error specified by the meter manufacturer will not exceed +/- 0.2%. In case of meter failure, and a replacement export meter is required, it may be installed, and the error specified by the meter manufacturer will not exceed +/- 0.2%.

For the import electricity meter, the error specified by the meter manufacturer will not exceed +/- 0.5%.

The PPA specifies that the meters shall be calibrated once during each calendar year (the maximum time between two calibration events is 24 months). The import line electricity meter is under the control of PEA. Hence, the calibration will be done as per PEA</td></tr>
</table>

<table>
<tr><td></td><td>requirement. The calibration details of energy meters are given below:
The energy meters are calibrated within 2-year frequency. The calibration details are given below:
<table>
<tr><th>Meter</th><th>Calibration date</th><th>Due date</th></tr>
<tr><td rowspan="4">96499384
96499385</td><td>11 Jul 2018</td><td>10 Jul 2020</td></tr>
<tr><td>24 Jul 2019</td><td>23 Jul 2021</td></tr>
<tr><td>21 Oct 2021</td><td>20 Oct 2023</td></tr>
<tr><td>12 Dec 2022</td><td>11 Dec 2024</td></tr>
</table>
As the import calibration reports are not made available to PD by PEA, PD has applied maximum possible error of 0.5% applied to import value for the entire monitoring period as conservative option as follows:
Adjusted import = Recorded import *(1+0.5%)</td></tr>
<tr><td>Purpose of data:</td><td>To monitor the contribution to SDG 7 (Ensure access to affordable, reliable, sustainable and modern energy for all</td></tr>
<tr><td>Additional comments:</td><td>-</td></tr>
</table>

SDG 8:

<table>
<tr><td>Data/parameter:</td><td>• Number of jobs created
• Number of Training conducted</td></tr>
<tr><td>Unit</td><td>-</td></tr>
<tr><td>Description</td><td>Total employment generated due to the implementation of project activity and number of trainings conducted</td></tr>
<tr><td>Measured/calculated/default</td><td>Measured</td></tr>
<tr><td>Source of data</td><td>Plant employment records & Training records</td></tr>
<tr><td>Value(s) of monitored parameter</td><td>Number of Jobs created
<table>
<tr><th>Vintage</th><th>Number of Long-term jobs created</th></tr>
<tr><td>01/11/2021 to 31/12/2021</td><td>0(Already considered in the last monitoring period)</td></tr>
</table></td></tr>
</table>

	01/01/2022 to 31/12/2022 — 28 (Same People Retain) 01/01/2023 to 31/12/2023 — 28(Same People Retain) Average — 28 Number of Training conducted **Vintage** / **No. of training conducted** 01/11/2021 to 31/12/2021 — 0 01/01/2022 to 31/12/2022 — 07 01/01/2023 to 31/12/2023 — 03 Total — 10
Monitoring equipment	No monitoring equipment is involved
Measuring/reading/recording frequency:	Yearly Once
Calculation method (if applicable):	Manually by PP representative
QA/QC procedures:	The number of people employed would be mentioned in the plant register.
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:	-

Safeguarding Principle 8.2:

Data/parameter:	Soil Erosion mitigation measures
Unit	-
Description	Construction phase: • Fast-growing and earth-bounding plants such as vetiver grass should be planted in the construction area of the project's road in order to prevent the collapse of soil layers • Stone structure examination and soil test will be conducted in the project's construction area or

	wind turbine installation area in order to prevent the collapse of soil layers efficiently • Avoid the construction during the rain in order to prevent the soil washed down in the project area Operational phase: Fast-growing and earth-bounding plants should be planted in the area of the project's road in order to prevent the collapse of soil layers
Measured/calculated/default	Measured
Source of data	Interview with maintenance staff.
Value(s) of monitored parameter	All mitigation measures are followed at site
Monitoring equipment	-
Measuring/reading/recording frequency:	Yearly Once
Calculation method (if applicable):	-
QA/QC procedures:	-
Purpose of data:	To monitor compliance to Safeguarding Principle 8.2 (Erosion and/or Water Body Instability)
Additional comments:	-

Safeguarding Principle 9.5:

Data/parameter:	Hazardous waste management
Unit	-
Description	The following management measures shall be followed: • Provision of proper temporary storage for hazardous waste • Waste segregation • Waste disposal by an appointed/accredited waste disposer company
Measured/calculated/default	Measured
Source of data	Project O&M HSE logbook, or interview with maintenance staff.
Value(s) of monitored parameter	All mitigations measures are followed at the site

<table>
<tr><td></td><td>
<table>
<tr><th>Vintage</th><th>Proper temporary Storage</th><th>Waste segregation</th><th>Disposal by accredited waste disposer company</th></tr>
<tr><td>01/11/2021 to 31/12/2021</td><td>Yes</td><td>Yes</td><td>Yes</td></tr>
<tr><td>01/01/2022 to 31/12/2022</td><td>Yes</td><td>Yes</td><td>Yes</td></tr>
<tr><td>01/01/2023 to 31/12/2023</td><td>Yes</td><td>Yes</td><td>Yes</td></tr>
</table>
</td></tr>
<tr><td>Monitoring equipment</td><td>-</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 compliance to Safeguarding Principle 9.5 (Hazardous and Non-hazardous Waste)</td></tr>
<tr><td>Additional comments:</td><td>-</td></tr>
</table>

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

Data/Parameter	Value obtained in this monitoring period	Value obtained last monitoring period
Not Applicable	Not Applicable	Not Applicable

D.4. Implementation of sampling plan

Not Applicable

SECTION E. CALCULATION OF SDG IMPACTS

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

SDG 13 Climate Actions

The monitoring parameter for the SDG 13 is GHG emission reduction. In the baseline condition the project was not present and hence there is no emission reduction in the baseline scenario.

Vintage	Baseline Value
	Emission Reduction (tCO2)
01/11/2021 to 31/12/2021	0
01/01/2022 to 31/12/2022	0
01/01/2023 to 31/12/2023	0
Total	0

However, the baseline GHG emission baseline GHG emissions are estimated as below:

The baseline emission is calculated in line with AC0002, Version 20, using equation below

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

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 46 of ACM0002, version 20, 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 is monitored continuously and reported monthly in the Monthly meter reading statement. The net electricity is calculated based on the difference between export & Import reported in the statement.

Based on the net electricity export calculated & the grid emission factor, the baseline emission is calculated as below:

Year	Net Generation (MWh)	Grid Emission Factor (tCO_2/MWh)	Baseline emission (tCO_2)
Year 2021	55,338	0.5692	31,498
Year 2022	165,958	0.5692	94,463
Year 2023	203,339	0.5692	115,740
Total	**424,635**	**0.5692**	**241,701**

SDG 3 Good Health & Well-being:

The monitoring parameter for the SDG 3 is community development activities undertaken. Since baseline and pre-project scenario are same, in the baseline condition no project was available and hence PP would have not undertaken any community development activities undertaken. Hence, the baseline value is zero.

Vintage	Baseline Value
	Number of community development activities
01/11/2021 to 31/12/2021	0
01/01/2022 to 31/12/2022	0
01/01/2023 to 31/12/2023	0
Total	0

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)
01/11/2021 to 31/12/2021	0
01/01/2022 to 31/12/2022	0
01/01/2023 to 31/12/2023	0
Total	0

SDG 8: Decent Work and Economic Growth

The monitoring parameter for the SDG 8 are number of jobs generated and Number of trainings provided to employees. Since baseline and pre-project scenario are same, in the baseline condition these values are zero.

Vintage	Baseline Value
	Number of trainings conducted (Nos)
01/11/2021 to31/12/2021	0
01/01/2022 to 31/12/2022	0
01/01/2023 to 31/12/2023	0
Total	0

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

SDG 13 Climate Actions

As per the approved consolidated Methodology ACM0002 (Version 20.0):

"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 wind 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 $PE_{FF,y}$, $PEGP_{,y}$, $PE_{HP,y}$ is equal to zero and thus, $PE_y = 0$

Since there is no project GHG emission involved in the project, the emission reduction is equal to baseline emission.

Vintage	Project Value
	Emission Reduction (tCO_2)
01/11/2021 to 31/12/2021	31,498
01/01/2022 to 31/12/2022	94,463

01/01/2023 to 31/12/2023	115,740
Total	**241,701**

SDG 3 Good Health & Well-being:

The monitoring parameter for the SDG 3 is community development activities undertaken. The same is taken from CSR records.

Vintage	Project Value
	Number of community development activities
01/11/2021 to 31/12/2021	0
01/01/2022 to 31/12/2022	05
01/01/2023 to 31/12/2023	01
Total	06

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 300,364 MWh electricity during the monitoring period.

Vintage	Project Value
	Quantity of net electricity supplied to the grid (MWh)
01/11/2021 to 31/12/2021	55,338
01/01/2022 to 31/12/2022	165,958
01/01/2023 to 31/12/2023	203,339
Total	**424,635**

SDG 8: Decent Work and Economic Growth

The monitoring parameter for the SDG 8 are number of jobs generated and Number of trainings provided to employees. During the project scenario, the following is achieved:

Vintage	Project Value
	Number of Long-term jobs Created (Nos)
01/11/2021 to 31/12/2021	0(Already considered in last monitoring period)
01/01/2022 to 31/12/2022	28(Same People Retain)
01/01/2023 to 31/12/2023	28(Same People Retain)
Average	28

These can be crosschecked from the employment records and training records.

E.3. Calculation of leakage

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

Hence, LEy= 0

Vintage	Leakage (tCO2e)
01/11/2021 to 31/12/2021	0
01/01/2022 to 31/12/2022	0
01/01/2023 to 31/12/2023	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 13	Emission Reduction (tCO_2e)	0	241,701	241,701
SDG 3	No. of Community development activities	0	06	06
SDG 7	Renewable Electricity Generated (MWh)	0	424,635	424,635
SDG 8	Number of Jobs generated (Nos)	0	28	28
SDG 8	Trainings provided to O&M staff (Nos)	0	10	10

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
13	286,795 tCO_2e emission reduction	241,701 tCO_2e emission reduction

[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.

3	2 community development activities	06 community development activities
7	503,856 MWh electricity generation	424,635 MWh electricity generation
8	40 jobs created	28 jobs created
8	4 training provided to O&M Staff	10 training provided to O&M Staff

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.

SDG Goal	**SDG 13**	**SDG 3**	**SDG 7**	**SDG 8**	
SDG Impact	Emission reduction (tCO2)	CSR activities (No)	Electricity generated (MWh)	Jobs Created (Nos)	Trainings provided to O&M staff (Nos)
Estimation as per PDD (For 1 year)	132,339	1	232,500	40	2
Number of days in the monitoring period	791	791	791	791	791
Estimation for the monitoring period	286,795	2	503,856	40	4

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

Parameter	**Increase or decrease?**	**Justification**
Emission Reduction	Decrease	Lesser emission reduction achieved due to lesser PLF achieved during the monitoring period.

Community development activities	Increase	During ex-ante estimation, PP conservatively considered 1 community development activity per year. However, the actual number of community development activities higher than estimated value as PP decided to undertake more community development activities during the monitoring period
Electricity generated	Decrease	During the design stage, PP estimated higher PLF. However, during the operational the actual emission reduction is much lesser than estimated PLF which is due to low wind availability in the project location which is not in control of PP. This can be justified from historical PLF achieved in the project (refer previous CDM MRs). Hence, the reduction in ER is not specific to the current monitoring period, but all the years from commissioning
Number of jobs	Decrease	As per initial estimation, the number of jobs required are 40 which was also the case during the initial years of operations. As the plant is stabilized now and not much operational issues arise, the requirement of manpower reduced to 28 in the current monitoring period.
Number of Training	Increase	During ex-ante estimation, PP conservatively considered 2 training activities per year. However, the actual training conducted is higher than estimated value as PP planned more trainings during the monitoring period

SECTION F. SAFEGUARDS REPORTING

Principles	Mitigation Measures added to the Monitoring Plan
Principle 8.2	Construction phase: • Fast-growing and earth-bounding plants such as vetiver grass should be planted in the construction area of the project's road in order to prevent the collapse of soil layers

	• Stone structure examination and soil test will be conducted in the project's construction area or wind turbine installation area in order to prevent the collapse of soil layers efficiently • Avoid the construction during the rain in order to prevent the soil washed down in the project area Operational phase: • Fast-growing and earth-bounding plants should be planted in the area of the project's road in order to prevent the collapse of soil layers
Principle 9.5	The following management measures shall be followed: • Provision of proper temporary storage for hazardous waste • Waste segregation • Waste disposal by an appointed/accredited waste disposer company

All the above mitigation measures are implemented at site during the monitoring period.

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.

Not Applicable

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

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