



TROPICAL WIND IN THAILAND



Document Prepared By: Kosher Climate India Private Limited

Contact Information: vamsi@kosherclimate.com

Project Title	TROPICAL WIND IN THAILAND
Version	02
Report ID	T2MR-04
Date of Issue	23-February-2024
Project ID	VCS 1997
Monitoring Period	01-August-2022 to 31- May- 2023 (inclusive of first and last date)
Prepared By	Kosher Climate India (P) Limited
Contact	Zee Plaza, No.1678, Ground Floor, 27 th Main Road, Sector 2, HSR Layout, Bengaluru, Karnataka 560102, India Mobile: +91- 9945343475 Ph: +91- 80- 49931177 Email: vamsi@kosherclimate.com , narendra@kosherclimate.com

CONTENTS

1	PROJECT DETAILS	3
1.1	Summary Description of the Implementation Status of the Project	3
1.2	Sectoral Scope and Project Type	4
1.3	Project Proponent	5
1.4	Other Entities Involved in the Project	5
1.5	Project Start Date	5
1.6	Project Crediting Period	5
1.7	Project Location	6
1.8	Title and Reference of Methodology	7
1.9	Participation under other GHG Programs	7
1.10	Other Forms of Credit and Supply Chain (Scope 3) Emissions.....	7
1.11	Sustainable Development Contributions	8
2	SAFEGUARDS	11
2.1	No Net Harm	11
2.2	Local Stakeholder Consultation	11
2.3	AFOLU-Specific Safeguards	11
3	IMPLEMENTATION STATUS	12
3.1	Implementation Status of the Project Activity	12
3.2	Deviations.....	12
3.3	Grouped Projects	12
4	DATA AND PARAMETERS.....	12
4.1	Data and Parameters Available at Validation.....	12
4.2	Data and Parameters Monitored.....	13
4.3	Monitoring Plan.....	15
5	QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS	17
5.1	Baseline Emissions	17
5.2	Project Emissions	18
5.3	Leakage	18
5.4	Net GHG Emission Reductions and Removals	18
	APPENDIX X: COMPARISON OF ACTUAL ER WITH ESTIMATED ER	20

1 PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

The proposed project activity involves the installation of Wind Turbine Generators (WTG) in Nakhon Ratchasima of Thailand (T2 Wind farm). The project is developed by Tropical Wind Co., Ltd, Thailand. Tropical Wind Co., Ltd is a subsidiary of Wind Energy Holding Co., Ltd.

The purpose of the project activity is to generate clean electricity with utilization of wind energy. The project consists of 30 numbers of Vestas Wind Turbine Generators (WTGs) of 3.0 MW capacities each. The project WTGs are installed in the Wangyaithong and Bueng Prue sub-districts of Thepharak District, Nakhonratchasima Province in Thailand.

All the WTGs of the project activity were commissioned on 28-September-2018. The WTGs are operational continuously since commissioning without any major outages.

The electricity generated by the project is exported to the Thailand National grid. The project activity will therefore displace an equivalent amount of electricity which would have otherwise been generated by fossil fuel dominant electricity grid. 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, natural gas, diesel, and bunker oil.

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 regional grid.

The estimation of GHG reductions by this project is limited to carbon dioxide (CO₂) only. Thus the project activity leads to an emission reduction of 162,898 tCO₂ per year or 1,628,980 tCO₂ for the chosen crediting period of 10 years.

The current monitoring period chosen is from 01-August-2022 to 31- May- 2023 (inclusive of first & last date) and the GHG emission reductions calculated are 1,29,10 3tCO₂.

The Audit history is provided in the below table

Audit Type	Period	Program	VVB Name	Number of years
Joint Validation & verification	28-September-2018 to 31-October - 2019	VCS	Earthood Services Pvt Ltd	1 year 1 month 04 days
verification	1 - November - 2019 to 31 - December - 2020	VCS	LGAI Technological Center, S.A	1 year 1 month
Verification	1- January - 2021 to 31 - July - 2022.	VCS	4K Earth Science Pvt Ltd	1 year 7 months
Verification	1 - August - 2022 to 31-May - 2023. (On Going)	VCS	4K Earth Science Pvt Ltd	10 months
Total	28-September - 2018 to May 2023	VCS	-	4 years 8 months 04 days

1.2 Sectoral Scope and Project Type

Sectoral Scope : 01- Energy Industries (Renewable/Non-Renewable Sources)

Project Type: Type I

Methodology: ACM0002: Grid-connected electricity generation from renewable sources, version 19.0

The project is not a AFOLU projects or GCS projects or grouped projects, or projects with multiple project activity instances

1.3 Project Proponent.

Organization name	Tropical Wind Co., Ltd
Contact person	Phattarapol Pongwattanaivid
Title	Manager
Address	25 th Floor, Capital Tower, All Seasons Place, 87/1, Wireless road, Lumpini, Patumwan, Bangkok 10330, Thailand
Telephone	+66(0) 2106 8000
Email	phattarapol@windenergyholding.com

1.4 Other Entities Involved in the Project

Organization name	Kosher Climate India Private Limited
Role in the Project	Authorized Representative
Contact person	Vamsi Krishna
Title	Global Business Head
Address	Zee Plaza, No.1678, Ground Floor, 27 th Main Road, Sector 2, HSR Layout, Bengaluru, Karnataka 560102, India
Telephone	+91-99453 43475
Email	vamsi@kosherclimate.com , narendra@kosherclimate.com

1.5 Project Start Date

The start date for this project is 28-September-2018. This is the date of commissioning of the project.

1.6 Project Crediting Period

1st Crediting period: 28-September-2018 to 27-September-2028 (inclusive of first and last date).

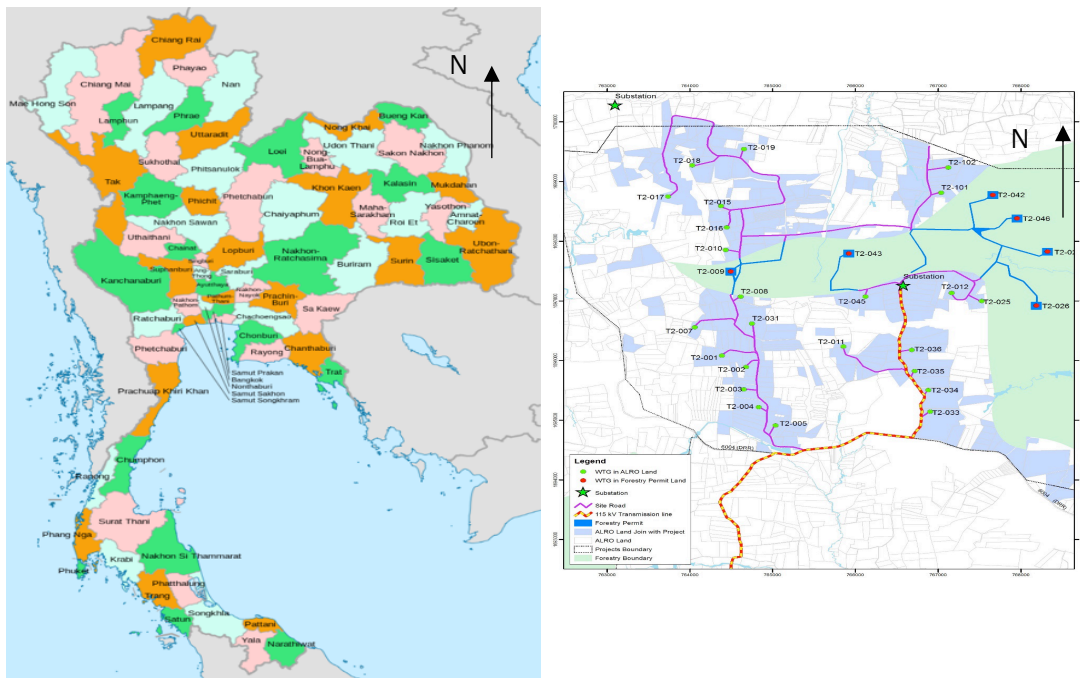
Length of 1st Crediting period: 10 years

The project activity adopts renewable crediting period of 10 years period which can be renewed for maximum 2 times

1.7 Project Location

The project activity is located in Nakhon Ratchasima province of Thailand. The geo-coordinates of the project location are as follows:

S.No	WTG ID	Latitude (°N)	Longitude (°E)	Sub-District	District
1	T2-001	15.327761	101.462373	Bueng Prue	Thepharak
2	T2-002	15.326015	101.465079	Bueng Prue	Thepharak
3	T2-003	15.322626	101.464763	Bueng Prue	Thepharak
4	T2-004	15.319917	101.466409	Bueng Prue	Thepharak
5	T2-005	15.31713	101.468282	Bueng Prue	Thepharak
6	T2-007	15.33211	101.459366	Bueng Prue	Thepharak
7	T2-008	15.336671	101.464582	Wangyaithong	Thepharak
8	T2-009	15.340497	101.463524	Wangyaithong	Thepharak
9	T2-010	15.343742	101.462994	Wangyaithong	Thepharak
10	T2-011	15.328995	101.476068	Wangyaithong	Thepharak
11	T2-012	15.336973	101.488337	Wangyaithong	Thepharak
12	T2-015	15.350415	101.462553	Wangyaithong	Thepharak
13	T2-016	15.347165	101.46314	Wangyaithong	Thepharak
14	T2-017	15.351936	101.456607	Bueng Prue	Thepharak
15	T2-018	15.356614	101.459382	Wangyaithong	Thepharak
16	T2-019	15.359017	101.465234	Wangyaithong	Thepharak
17	T2-025	15.335697	101.491683	Wangyaithong	Thepharak
18	T2-026	15.334948	101.497827	Wangyaithong	Thepharak
19	T2-027	15.343117	101.499171	Wangyaithong	Thepharak
20	T2-031	15.332582	101.465806	Wangyaithong	Thepharak
21	T2-033	15.31901	101.485692	Wangyaithong	Thepharak
22	T2-034	15.322287	101.485542	Wangyaithong	Thepharak
23	T2-035	15.325197	101.484014	Wangyaithong	Thepharak
24	T2-036	15.328374	101.483733	Wangyaithong	Thepharak
25	T2-042	15.351749	101.49313	Wangyaithong	Thepharak
26	T2-043	15.343087	101.476838	Wangyaithong	Thepharak
27	T2-045	15.336522	101.478635	Wangyaithong	Thepharak
28	T2-046	15.348187	101.495815	Wangyaithong	Thepharak
29	T2-101	15.352158	101.487328	Wangyaithong	Thepharak
30	T2-102	15.355959	101.488176	Wangyaithong	Thepharak



1.8 Title and Reference of Methodology

The methodology applied for the project is Approved Large Scale Consolidated Methodology: ACM0002 “Grid-connected electricity generation from renewable sources” (Version 19.0, EB100)¹

ACM0002 draws upon the following tools which have been used in the PD:

- Methodological Tool: Tool to calculate the emission factor for an electricity system - Version 7.0, EB 100, Annex 6.²
- Methodological Tool: Tool for the demonstration and assessment of additionality - Version 07.0.0, EB 70 Annex 8.³

1.9 Participation under other GHG Programs

The project is not registered under any other GHG programs.

1.10 Other Forms of Credit and Supply Chain (Scope 3) Emissions

The GHG emission reductions from the project activity are included in any emissions trading program or any other mechanism that includes GHG allowance trading

¹ <http://cdm.unfccc.int/methodologies/DB/VJI9AX539D9MLOPXN2AY9UR1N4IYGD>

² http://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-07-v7.0.pdf/history_view

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

The project has not sought or received another form of GHG-related environmental credit, including any form of renewable energy certificates, during this monitoring period

The project also does not affect emissions associated with a good or service that is included in the Supply Chain (Scope 3) Emissions

1.11 Sustainable Development Contributions

Social wellbeing: The project helps in generating employment opportunities during the construction and operation phases. The project activity leads to development in infrastructure in the region like development of roads and also may promote locals' business with improved power generation.

Economic wellbeing: The project is a clean technology investment in the region, which would not have been taken place in the absence of the VCS benefits. The project activity will also help to reduce the demand supply gap in Thailand.

Environmental Wellbeing: The project activity will generate power using zero emissions wind based power generation which helps to reduce GHG emissions and specific pollutants like SO_x, NO_x, and SPM associated with the conventional thermal power generation facilities.

Technological wellbeing: The successful operation of project activity would lead to promotion of wind based power generation and would encourage other entrepreneurs to participate in similar projects.

Table 1: Sustainable Development Contributions

Row numb	SDG Target	SDG Indicator	Net Impact on SDG Indicator	Current Project Contributions	Contributions Over Project Lifetime
01	3.b	3.b.1 Proportion of the population with access to affordable medicines and vaccines on a sustainable basis	Implemented activities to increase	PP has supported following activity during the monitoring period. Support Thepharak District Office Wet Trash Donation Project. 25% of the amount is funded from this project revenue. Hence, effectively 20 people benefited from project contribution.	About 80 people benefited from this project since commissioning
02	4.3	4.3.1 Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, by sex	Implemented activities to increase	The PP Supported following events Huay Namkhem School concrete walking way. About 25% of the amount is funded from this project. Hence, about 55 students benefitted from this activity.	Total 5 Schools and 312 students are benefitted from this activity since commissioning till this monitoring period.
03	7.2	7.2.1 Renewable energy share in the total final energy consumption	Implemented activities to increase	About 226,817 MWh renewable electricity has supplied to Thailand National grid during the reported period that helps to increase the renewable energy share in the energy mix. Refer section 4.5 for the monitoring details.	Since commissioning, about 1,157,938 MWh renewable electricity has supplied to Thailand National grid till this monitoring that helps to increase the renewable energy share in the energy mix.
04	8.5	8.5.2 Unemployment rate, by sex, age and persons with disabilities	Implemented activities to increase	No incremental activities occurred during this reporting period.	The project has created about 13 permanent jobs since commissioning

05	11.4	11.4.1 Total expenditure (public and private) per capita spent on the preservation, protection and conservation of all cultural and natural heritage, by type of heritage (cultural, natural, mixed and World Heritage Centre designation), level of government(national, regional and local/municipal), type of expenditure (operating expenditure/investment) and type of private funding (donations in kind, private non-profit sector and sponsorship)	Implemented activities to increase	No incremental activities occurred during this reporting period.	About 10,000 Baht is sponsored for the support of cultural and natural heritage sites since commissioning.
06	13.0	13.0 Tonnes of greenhouse gas emissions avoided or removed	Implemented activities to increase	By supplying 226,817 MWh clean electricity to national grid, the project avoided release of 129,104 tCO ₂ into the atmosphere during the reporting period and contributed to the sustainable development goal 13. Refer section 5 for the emission reduction calculation.	Prevented the release of 692,491 tCO ₂ into the atmosphere since its commissioning.
07	15.3	15.3.1Proportion of land that is degraded over total land area	Implemented activities to increase	No incremental activities occurred during this reporting period.	Around 10 hectares of degraded land is environmentally restored by planting tree samplings since commissioning till this monitoring period.

2 SAFEGUARDS

2.1 No Net Harm

The project is a wind power generation project. There were no potential impact identified from the project and hence no mitigations measures are applicable.

2.2 Local Stakeholder Consultation

The stakeholder consultation meeting took place at the site office on 2nd September 2019. Invitation notices were put up in the local government offices at least a week in advance of the consultations. In the introductory speech, the representatives of developer welcomed the gathering and informed the stakeholders about the project activity; project's associated benefits with respect to CO₂ emission reductions and explained the purpose of conducting the stakeholder meeting in order to gather the views and comments of the local stakeholders on the project activity. Subsequent to the introductory speech, comments were received from the stakeholders.

No negative feedback was received from any of the stakeholders. All of them supported the initiative and appreciated the project proponent for carrying out such an activity in the region. Hence no comments warranting action from the project proponent were received

On-going communication with local stakeholders

PP has a mechanism to receive feedbacks/grievances from local stakeholder continuously. PP has kept the grievance register/forms at the site office which is easily accessible to local public. Stakeholders can write their feedback or grievances in the register/forms. The site in-charge will take necessary action on the grievances. If any grievances are not resolved, the stakeholders can escalate the issue to the top management by writing email to napat@windenergyholding.com.

No grievances received during the monitoring period.

2.3 AFOLU-Specific Safeguards

The project activity is the construction and generation of electricity from greenfield wind plants. This does not fall under AFOLU projects, hence this section is not applicable to this project activity.

3 IMPLEMENTATION STATUS

3.1 Implementation Status of the Project Activity

All the WTGs of the project activity were commissioned on 28-September-2018. Since commissioning, all the WTGs are operational continuously without any major outages.

During the monitoring period, there is no major events occurred that may impact the GHG emission reductions or removals and monitoring

No other changes to the project such as change in project proponent or other entity happened during the monitoring period.

3.2 Deviations

3.2.1 Methodology Deviations

There are no methodology deviations applied during this monitoring period.

3.2.2 Project Description Deviations

There is no project description deviations applied during this monitoring period or in previous monitoring reports.

3.3 Grouped Projects

The project is not a grouped project. Hence its not applicable.

4 DATA AND PARAMETERS

4.1 Data and Parameters Available at Validation

Data / Parameter	EF _{OM, y}
Data unit	tCO ₂ /MWh
Description	Operating margin CO ₂ emission factor of Thailand National Grid
Source of data	Report 'Thailand Grid Emission Factor for GHG Reduction Project/Activity' dated 28/09/2017 Published by Thailand Greenhouse Gas Management Organisation (Public Organisation)
Value applied	0.5719
Justification of choice of data or description of	Calculated in Report 'Thailand Grid Emission Factor for GHG Reduction Project/Activity' dated 28/09/2017 Published by

measurement methods and procedures applied	Thailand Greenhouse Gas Management Organisation (Public Organisation) in line with “<i>Tool to calculate the emission factor for an electricity system</i>”. 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 $= \frac{\sum_{i=1 \text{ to } n} (\text{Net generation in operating margin in year } i * \text{Simple operating margin in year } i)}{\sum_{i=1 \text{ to } n} (\text{Net generation in operating margin of year } i)}$
Purpose of Data	Calculation of Baseline Emission
Comments	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

Data / Parameter	EF _{BM,y}
Data unit	tCO ₂ /MWh
Description	Build margin CO ₂ emission factor of Thailand National grid
Source of data	Report ‘Thailand Grid Emission Factor for GHG Reduction Project/Activity’ dated 28/09/2017 Published by Thailand Greenhouse Gas Management Organisation (Public Organisation)
Value applied	0.5609
Justification of choice of data or description of measurement methods and procedures applied	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 “ <i>Tool to calculate the emission factor for an electricity system</i> ”.
Purpose of Data	Calculation of Baseline Emission
Comments	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,CM,y}
Data unit	tCO ₂ /MWh
Description	Combined margin CO ₂ emission factor of Thailand National grid

Source of data	Report 'Thailand Grid Emission Factor for GHG Reduction Project/Activity' dated 28/09/2017 Published by Thailand Greenhouse Gas Management Organisation (Public Organisation)
Value applied	0.5692
Justification of choice of data or description of measurement methods and procedures applied	The date has been considered in accordance to 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	Calculation of Baseline Emission
Comments	The combined margin would be calculated ex-ante and fixed for the entire crediting period

4.2 Data and Parameters Monitored

Data / Parameter	$EG_{facility,y}^4$
Data unit	MWh/year
Description	Quantity of net electricity supplied by the project activity to the grid in the year y
Source of data	Monthly Energy meter reading & invoice raised by EGAT
Description of measurement methods and procedures to be applied	Data Type: Measured & Calculated. Monitoring equipment: Energy meters of accuracy class 0.2s Archiving Policy: Paper & Electronic. Location of Energy Meter: EGAT Substation These meters are two-way meter through which export and import data will be continuously monitored. These data will be printed and recorded on a monthly basis. Additionally, one back up meter is also installed. The Net electricity supplied to the grid by each wind project is estimated as below Net electricity = Export – Import
Frequency of monitoring/recording	Measurement: Continuous Recording: Monthly
Value monitored	226,817 MWh <i>*After applying 0.2% error for the calibration delay period.</i>

⁴ Since the project activity is the installation of a Greenfield power plant, then: $EG_{PJ,y} = EG_{facility,y}$

Monitoring equipment	Energy meters:		
	Meter Number	Main: 51515187 Backup: 51515188	
	Accuracy	0.2s	
	Location	Si Khiu 3 Substation (EGAT)	
	Calibration Frequency	1 year	
QA/QC procedures to be applied	The export reading has been crosschecked with the Invoice raised by the developer to EGAT		
	The meter(s) shall be calibrated and maintained by the EGAT as per their own schedule, and this frequency of meter calibration is not within the control of the Project Proponent.		
	The calibration details are given below:		
	Details	Calibration dates	Calibration due date
	Main Meter Mt No: 51515187	17/03/2020	16/03/2021
		23/03/2021	22/03/2022
		24/02/2022	23/02/2023
	Backup meter Mr. No: 51515188	17/03/2020	16/03/2021
		23/03/2021	22/03/2022
		24/02/2022	23/02/2023
As per the above calibration date, the calibration is not valid for the period 24/02/2023 to 31/05/2023. Hence, Feb 2023 to May 2023 export & import reading are adjusted with maximum possible error as described below: Adjusted Export = Recorded Export* (1-0.2%) Adjusted Import = Recorded Import *(1+0.2%)			
Purpose of the data	Calculation of baseline emission		
Calculation method	-		
Comments	The data would be archived electronically and maintained for the entire crediting period plus two years.		

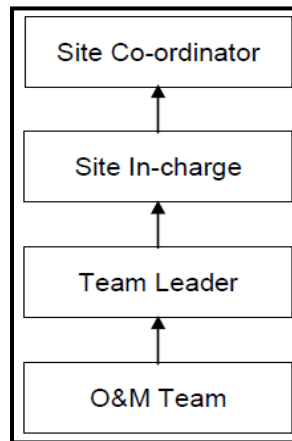
4.3 Monitoring Plan

The wind projects has entered into agreement with the WTG Suppliers for the operation and maintenance of WTGs.. O&M contractor will provide a monthly report, which includes generation data, major breakdown events and machine availability. Project manager is responsible for recording of monthly meter readings of export and import. Monthly power export and import data will be sent regularly to site in charge

In case monitoring period and billing date does not coincide, then the electricity export and import for the starting/ending month will be apportioned based on the number of days in the month.

Monitoring roles and responsibilities:

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



The Site In-charge will be responsible for carrying out internal auditing and QA/QC. All the values from generation record will be checked with JMR and invoices for consistency. In case there are any non-conformances identified the Site In-charge will investigate the error and revise the record to correct it. In any case where values have slightest of variation in different records the most conservative value will be taken in the project monitoring report.

Personal Training:

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

Emergency preparedness:

In case Main meter or Check meter is found to be outside the acceptable limits of accuracy or faulty or not functioning properly, it will be repaired, recalibrated or replaced as soon as possible. In the event that the Main meter is not in service as a result of maintenance, repairs or testing, the Check meter will be used for readings. In rare occurrences of the meters at the substation are destroyed due to man-made or natural disasters, the lowest of the previous 3-month energy meter reading shall be considered.

Data recording & archiving: The project proponent shall maintain data both in electronic form and hard copies. The monitored data shall be archived till 2 years after the completion of crediting period.

Monitoring Process at project site

Developer will monitor the quantity of electricity exported to the grid and imported to the project activity using the electricity meters installed in the power plant, which undertaken by EGAT. Both electricity meters will measure the amount of electricity continuously and record electronically. The

O&M operator also manually record amount of the electricity import and export meter to the grid from meters in the log book monthly. The monitoring reports will be checked and discussed periodically.

All monitored data will be stored for at least two years after the end of crediting period or the last issuance of VCUs for this project activity, whichever occurs later.

Oversight and accountability:

The possibility of oversight is unlikely as the energy meter readings are recorded jointly by PP and EGAT which is the basis for the electricity billings. Also, a backup meter is available to crosscheck any considerable difference in the energy reading.

Internal auditing and QA/QC

No requirement of internal audit for the data monitored as the data is measured by the energy meter installed by EGAT (government authority) and the reading is recorded every month by jointly by PP & representative from EGAT. The main energy meter readings are verified against the reading of the backup meter to check any considerable variation. In case, considerable variation (ie, >1%) found, then either main meter reading or check meter reading whichever lower will be considered. The electricity readings recorded are used for electricity invoicing to EGAT. Hence, the data collected is of high accuracy and authorised by EGAT.

Handling Non-conformities

Not applicable as the energy meter recording is done by EGAT and hence no internal audit will be carried out to verify the data.

Sampling approaches:

No sampling approach is used as all the monitoring parameter is monitored 100%.

5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

5.1 Baseline Emissions

As per description earlier under this document:

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

$EF_{grid,CM,y}$ is Combined margin CO₂ 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” (tCO₂/MWh) (i.e, 0.5692 tCO₂/MWh).

and;

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

Net Electricity ($EG_{facility,y}$) month wise data:

Sl.No	Month	Billing energy in kWh (Export)	Adjusted Export energy in kWh	Billing energy in kWh (Import)	Adjusted Import Energy in kWh	Net Energy(Export-Import)
1	Aug-22	2,17,95,090	2,17,95,090	60,000	60,000	2,17,35,090
2	Sep-22	1,13,59,430	1,13,59,430	1,59,600	1,59,600	1,11,99,830
3	Oct-22	2,70,85,220	2,70,85,220	27,600	27,600	2,70,57,620
4	Nov-22	1,60,35,870	1,60,35,870	87,600	87,600	1,59,48,270
5	Dec-22	3,75,56,553	3,75,56,553	6,000	6,000	3,75,50,553
6	Jan-23	3,16,67,363	3,16,67,363	18,000	18,000	3,16,49,363
7	Feb-23	2,15,35,085	2,14,92,015 *	78,000	78,156*	2,14,13,859
8	Mar-23	2,45,76,508	2,45,27,354 *	55,200	55,310*	2,44,72,044
9	Apr-23	2,05,28,018	2,04,86,961 *	60,000	60,120*	2,04,26,841
10	May-23	1,54,76,193	1,54,45,240 *	81,600	81,763*	1,53,63,477
	Total	22,76,15,328	22,74,51,096	6,33,600	6,34,150	22,68,16,947

*adjusted for calibration delay

5.2 Project Emissions

The project activity involves in harnessing wind power. So, the emissions from the project are zero

5.3 Leakage

No leakage emissions have been considered and hence the leakage emission is zero.

5.4 Net GHG Emission Reductions and Removals

As per the applied methodology, emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y - LE_y$$

Where,

ER_y = Emission Reduction in tCO₂e/year

BE_y = Baseline emission in tCO₂/year

PE_y = Project emissions in tCO₂e/year

LE_y = Project Leakage emission in tCO₂e/year

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
2022	64,599	0	0	64,599
2023	64,504	0	0	64,504
Total	129,103	0	0	129,103

<u>Ex-ante emissions reductions/removals</u>	<u>Achieved emissions reductions/removals</u>	<u>Percent difference</u>	<u>Justification for the difference</u>
135,674 tCO ₂ e	129,103 tCO ₂ e	-4.84%	Since actual emission reduction of all the projects are less than estimated emission reduction, This is due to lesser PLF achieved during the monitoring period because of the low wind. Hence no further justification is required.

APPENDIX I: COMPARISON OF ACTUAL ER WITH ESTIMATED ER

Description	Value	Unit
Start date of Monitoring period	01-Aug-22	
End date of Monitoring period	31-May-23	
Total days in the Monitoring period	304	
Estimated emission Reduction As per PDD	162,898	tCO ₂ e
Estimated ERs for this monitoring period	135,674	tCO ₂ e
Actual Emission Reduction	1,29,103	tCO ₂ e
Difference in Emission reduction	-4.84%	%

APPENDIX II: SDG CONTRIBUTIONS

Thepharak District Office Wet Trash Donation Project



Hauy Namkhem School concrete walking

