



**Verified Carbon
Standard**

GRID CONNECTED WIND ENERGY PROJECT IN TAMIL NADU



Document Prepared by Earthood Services Private Limited

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Prepared By	Earthood Services Private Limited
Contact	Address: 1203-1205, 12th Floor, Tower B, Emaar Digital Greens, Sector 61, Gurugram, Haryana, India 122011

	Contact no.: +91 124 420 4599 Email: info@earthhood.in Website: www.earthhood.in
Approved By	Dr. Kaviraj Singh Managing Director
Work Carried Out By	Team Leader: Vishnu Panicker Technical Expert (TA 1.2): Vishnu Panicker Verifier/ Trainee TL: Kerwyn Donald Dsouza Local Expert: Vishnu Panicker Technical Reviewer: Shifali Guleria Technical Expert to Technical Reviewer (TA 1.2): Shifali Guleria

Summary:

The project activity involves the generation of electricity through a greenfield wind power plant having a capacity of 49.5 MW located in the Indian state of Tamil Nadu, India. The project activity “Grid Connected Wind Energy Project in Tamil Nadu” involves installation and operation of a wind power plant of 49.5 MW (cumulative capacity), with 30 number of WTGs each with a rated capacity of 1.65 MW that supply the generated electricity to the Indian national grid.

Earthood Services Private Limited (Earthood) is contracted to conduct the verification of the VCS registered project activity Grid Connected Wind Energy Project in Tamil Nadu by the project proponent CLP Wind Farms (Theni – Project II) Private Limited. The assessment is performed in line with the VCS requirements for project activities. The review of the MR, supporting documentation and subsequent follow-up actions have provided Earthood with sufficient evidence to determine the fulfilment of stated criteria including but not limited to the VCS Standard /04/, VCS Validation and Verification Manual/23/ and other relevant rules and requirements established by Verra.

During the current monitoring period, from 01/10/2021 to 31/12/2022 (inclusive of both days), the plant has successfully delivered 85,385.95 MWh of electricity to the national grid and the actual emission reductions were calculated as 79,803 tCO₂e.

A risk-based approach has been followed to perform this verification assessment and no uncertainties are associated with the verification. A total of 02 CLs, 06 CARs was raised in the current verification was successfully address during the current verification process of the project activity and successfully closed as detailed in appendix IV of this report.

Earthood Services Private Limited can certify that the emission reductions achieved in the for the monitoring period 01/10/2021 to 31/12/2022 by VCS project activity “Grid Connected Wind Energy Project in Tamil Nadu” (VCS ID:911) amount to 79,803 tCO₂e. Therefore, this is being submitted for request of issuance, as per VCS procedures.

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1 INTRODUCTION

1.1 Objective

CLP Wind Farms (Theni – Project II) Private Limited (PP) has contracted Earthood Services Private Limited (VVB) to conduct the verification of the project activity “Grid Connected Wind Energy Project in Tamil Nadu” (VCS ID:911) located in the state of Tamil Nadu, India against the requirements of VCS Program for the monitoring period 01/10/2021 to 31/12/2022 (both days inclusive).

The objective of the verification assessment is to determine that the

- The project complies with all the applicable VCS requirements of the current version of the VCS Standard v4.5 and program guide v4.4/04/.
- Project conformity with the registered monitoring plan/01/ and applied methodology, ACM0002: Grid-connected electricity generation from renewable sources --- Version 20/05/
- The data/information reported is accurate, complete, consistent, transparent, and free of material error or omission.

In order to fulfil the above objectives, the VVB assigned the task of assessment to validation team that is collectively qualified as per Annex A.2.3.3 of ISO 14064-3 and other internal requirements.

The verification is an independent assessment of the project by a verification body that determines whether the project complies with the VCS rules and requirements.

1.2 Scope and Criteria

The verification scope of this assignment is defined as an independent and objective review of the VCS Monitoring report and the supporting annexures, which is reviewed by the assessment team against the relevant criteria including but not limited to monitoring methodology, applicable tools, VCS standard and guidance. The assessment team has applied a risk-based approach as per recommendations prescribed in the latest version of VCS Validation and Verification Manual.

The scope of this assignment is to:

- Conduct verification assessment in accordance with Earthood’s own QMS that is based on the VCS Validation and Verification Manual V3.2/23/ along with the guidance provided by the VCS board to determine if the project meets all applicable VCS requirements, including those specified in the VCS standard, relevant methodology, tools, and guidelines and processing the same with VCS Program Guide.
- Assess the accuracy, conservativeness, relevance, completeness, consistency, and transparency of the information provided by the project proponents.
- Determine whether information provided by the project proponents is reliable and credible.
- Present information in the form of verification report in a factual, neutral, coherent manner and referencing the sources and assumptions, and other forms of verification means employed.
- Report the findings and conclusions in an objective manner.
- Safeguard the confidentiality of all information obtained during verification; and

- Adhere to the principles of independence, ethical conduct, fair presentation, and due professional care in assessment process.

1.3 Level of Assurance

- ☐ Limited level of assurance
- ☒ Reasonable level of assurance

Earthood's verification approach is based on the understanding of the risks associated with reporting of GHG emission data and the controls in place to mitigate these. Earthood planned and performed the verification by obtaining evidence and other information and explanations that Earthood considers necessary to give reasonable level of assurance that reported estimated GHG emission reductions are fairly stated.

In our opinion the estimated and actual GHG emissions reductions were calculated correctly on the basis of the registered monitoring plan/01/ and monitoring methodology/05/.

The assessment result has a reasonable level of assurance in verification that GHG assertions are free of material errors, omissions, and misrepresentations. The documents and evidence reviewed are included under Appendix II of this report.

1.4 Summary Description of the Project

Grid Connected Wind Energy Project in Tamil Nadu Project consists of the operation of a wind power plant of 49.5 MW (cumulative capacity), with 30 number of WTGs each with a rated capacity of 1.65 MW that supply the generated electricity to the Indian national grid. The Project is spread across G.Usulampatti, Mottanoothu, Kothapatti, Shanmuga Sundara Puram & Marikundu villages in Theni district of Tamil Nadu state in India. The project activity's objective is to generate electricity in the region by using wind power and displacing an equal amount of generated electricity from non-renewable natural resources in the Indian grid. The location of the project was verified using the GPS coordinates/16/ and found consistent with the data provided in the registered PDD/01/. The details of the geographic coordinates are given below:

Sr. No.	Loc No.	Village	Taluk	District	HTSC No.	DOC	Longitude (E)	Latitude (N)
1	35	G.Usulampatti	Andipatti	Theni	WEG T 117	02-Jul-2010	77°33'53.78"	9°57'02.06"
2	1131	Mottanuthu	Andipatti	Theni	WEG T 100	25-Jun-2010	77°34'20.08"	9°56'30.83"
3	526	Mottanuthu	Andipatti	Theni	WEG T 95	25-Jun-2010	77°35'02.04"	9°57'07.75"
4	63	Koththapatti	Andipatti	Theni	WEG T 97	25-Jun-2010	77°35'26.08"	9°56'46.16"
5	1050	Mottanuthu	Andipatti	Theni	WEG T 103	25-Jun-2010	77°34'14.52"	9°57'20.06"

Sr. No.	Loc No.	Village	Taluk	District	HTSC No.	DOC	Longitude (E)	Latitude (N)
6	1422	Shanmugasundarapuram	Andipatti	Theni	WEG T 106	25-Jun-2010	77°33'04.40"	9°59'00.59"
7	1202	Mottanuthu	Andipatti	Theni	WEG T 91	25-Jun-2010	77°34'05.23"	9°55'46.90"
8	763	Mottanuthu	Andipatti	Theni	WEG T 120	02-Jul-2010	77°33'40.54"	9°58'45.28"
9	1064	Mottanuthu	Andipatti	Theni	WEG T 102	25-Jun-2010	77°34'34.83"	9°56'58.04"
10	177	Marikundu	Andipatti	Theni	WEG T 108	25-Jun-2010	77°33'20.37"	9°57'39.66"
11	26	Mottanuthu	Andipatti	Theni	WEG T 122	02-Jul-2010	77°35'19.41"	9°58'53.99"
12	781	Mottanuthu	Andipatti	Theni	WEG T 104	25-Jun-2010	77°34'06.37"	9°58'33.47"
13	64	G.Uslampatti	Andipatti	Theni	WEG T 118	02-Jul-2010	77°33'41.62"	9°56'30.64"
14	185	Marikundu	Andipatti	Theni	WEG T 119	02-Jul-2010	77°33'00.32"	9°57'56.24"
15	645	Mottanuthu	Andipatti	Theni	WEG T 101	25-Jun-2010	77°34'59.71"	9°58'14.94"
16	1087	Mottanuthu	Andipatti	Theni	WEG T 116	02-Jul-2010	77°34'11.23"	9°56'45.05"
17	1143	Mottanuthu	Andipatti	Theni	WEG T 99	25-Jun-2010	77°34'28.19"	9°56'19.93"
18	488	Mottanuthu	Andipatti	Theni	WEG T 92	25-Jun-2010	77°34'40.75"	9°56'43.03"
19	473	Mottanuthu	Andipatti	Theni	WEG T 93	25-Jun-2010	77°34'49.98"	9°56'32.52"
20	293	Mottanuthu	Andipatti	Theni	WEG T 114	02-Jul-2010	77°35'06.63"	9°56'50.57"
21	274	Mottanuthu	Andipatti	Theni	WEG T 115	02-Jul-2010	77°35'24.86"	9°57'01.23"
22	542	Mottanuthu	Andipatti	Theni	WEG T 98	25-Jun-2010	77°34'53.27"	9°57'24.12"

Sr. No.	Loc No.	Village	Taluk	District	HTSC No.	DOC	Longitude (E)	Latitude (N)
23	443	Mottanuthu	Andipatti	Theni	WEG T 94	25-Jun-2010	77°34'59.07"	9°56'20.61"
24	694	Mottanuthu	Andipatti	Theni	WEG T 121	02-Jul-2010	77°34'53.77"	9°58'36.03"
25	1194	Mottanuthu	Andipatti	Theni	WEG T 113	02-Jul-2010	77°34'03.96"	9°56'04.90"
26	197	Mottanuthu	Andipatti	Theni	WEG T 96	25-Jun-2010	77°35'29.19"	9°57'27.12"
27	292	Marikundu	Andipatti	Theni	WEG T 109	25-Jun-2010	77°32'53.88"	9°57'21.68"
28	1165	Mottanuthu	Andipatti	Theni	WEG T 90	25-Jun-2010	77°34'23.87"	9°55'55.31"
29	1149	Shanmugasundarapuram	Andipatti	Theni	WEG T 105	25-Jun-2010	77°33'35.52"	9°59'27.51"
30	195	Marikundu	Andipatti	Theni	WEG T 107	25-Jun-2010	77°32'41.36"	9°57'57.56"

The verification team based on the assessment of the documents, physical inspection during the on-site visit and interview with the PP and the plant personnel was able to confirm that the project activity is fully functional and implemented as described in the registered VCS PD/01/.

CL #01 was raised and successfully closed.

2 VERIFICATION PROCESS

2.1 Method and Criteria

The verification of the project consists of following steps:

Desk review-

- Review of data and information provided in the MR/02/ and corresponding annexures.
- Cross check the information with the sources without limitations to the information provided by the project proponent.

Follow up actions-

- On site audit to inspect the project design, including, but not limited to, implementation status and monitoring mechanism.

- Interview with relevant personnel and local stakeholders responsible for information given in the VCS MR/02/.

Reporting of findings-

- Resolution of findings
- Draft verification report

Independent technical review-

The project documentation is reviewed by internal technical reviewer in order to independently confirm whether the applicable GHG program requirements were objectively met or not, in addition to whether internal procedures were followed while arriving at the validation and verification opinion. The technical reviewer may accept or reject the verification opinion prepared by the assessment team and gives the reasons. The resolved findings may be opened at this stage or new findings may be identified that are required to be addressed by assessment team and/or project proponents, as appropriate. The technical reviewer is the decision maker on behalf of the Earthood Services Private Limited. A positive opinion is issued if all the findings have been satisfactorily resolved and in all other cases a negative opinion is issued unless the contract is terminated by either party before reaching the final opinion. Earthood keeps all documents and records in a secure and retrievable manner for at least two years after the end of the project crediting period.

2.2 Document Review

The verification is performed primarily as a document review of the documents submitted at various stages of assessments. The review is performed by assessment team using dedicated protocols. The assessment team cross checks the information provided in the documents, Project Description/01/, ER sheet/03/ & Monitoring Report/02/ and information from sources other than those used, if available, and also conducts independent background investigations. Earthood conducted a desk review as under:

- A. A review of the data and information presented to verify their completeness.
- B. A review of the monitoring plan, the monitoring methodology including applicable tool(s) and, where applicable, the applied standardized baseline, paying particular attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the quality assurance and quality control procedures.
- C. An evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions.

2.3 Interviews

During the current verification period, an on-site visit was conducted on 04/04/2023 in order to verify the implementation of the project activity. The on-site interviews with the PP representatives were conducted to discuss aspects of project implementation such as monitoring plan, the operations at the project site

(outages, if any), and other details like calibration of the monitoring equipment used during the current monitoring period, etc.

The required documents and details for the verification of project activity implementation were collected from project developer, through follow up emails.

The interviews were conducted in English and Tamil.

The details of the key personnel interviewed, and the main topics of the interviews are as follows-

S.no	Name	Affiliation	Topics discussed	Assessment team
1.	Navneet Kumar	Head – Carbon Offsets, CLP Wind Farms (Theni – Project II) Private Limited	- Project Implementation status	Vishnu Panicker
2.	Ilavarasan Arunaelralan	Assistant Manager, CLP Wind Farms (Theni – Project II) Private Limited	-Operation and Maintenance of Facility, Monitoring practices, Data collection, data storage, QA/QC	
3.	Ravi Pandiyan Subramanian	BOP, Renom	- Roles & Responsibilities - Calibration requirements	
4.	S Satish Kumar	Supervisor, Renom	- GHG calculations - Ongoing grievance mechanism - Awareness programmes undertaken by PP - Non-Involvement in Emissions Trading Programs and Other Binding Limits or Other Forms of Environmental Credit.	

2.4 Site Visits

During this verification, ESPL has conducted an onsite visit on 04/04/2023 to achieve the reasonable level of assurance that is in conformance with VCS rules. The details of the interviews conducted, and on-site activities undertaken have been described under section 2.3 above.

2.5 Resolution of Findings

The objective of this step is to identify, discuss and conclude on the issues related to the monitoring, implementation and operations of the registered project activity that could impair the capacity of the registered project activity to achieve emission reductions or influence the monitoring and reporting of emission reductions. This is done based on the desk review and on-site audit assessment. The verification team prepares and/or updates a verification protocol (internal document) that records the conformities and nonconformities, which may be of following types:

CAR (Corrective Action Request) is raised if one of the following occurs: Non-compliance with the monitoring plan, the methodology or the standardized baseline are found in monitoring and reporting and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient.

Modifications to the implementation, operation and monitoring of the registered project activity has not been sufficiently documented by the project participants Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions, change to the key sustainable development indicators. Issues identified in a FAR during validation to be verified during verification or previous verification(s) have not been resolved by the project participants. Clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable requirements have been met. All CARs and CLs raised by the Earthood during verification shall be resolved prior to submitting a request for issuance.

FAR (Forward Action Request) is raised during verification if the monitoring and reporting require attention and/or adjustment for the next verification period.

The total of 02 CL, 06 CARs was raised in the current verification was successfully addressed during the current verification assessment. No FAR was raised during this monitoring period. All the findings that are raised and communicated to project participant during the verification are included under Appendix IV. The section also includes the response, if provided, by the project participants and an assessment by the verification team if it was closed out or otherwise.

2.5.1 Forward Action Requests

No FAR is raised.

2.6 Eligibility for Validation Activities

No validation activity is undertaken; thus, this is not applicable.

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

Project is registered under VCS (VCS ID-911)/06/. It is confirmed from the declaration/07/ provided by the project owner of “Grid Connected Wind Energy Project in Tamil Nadu” that the net GHG emission reductions generated by the project activity will not be used for compliance with any other emissions trading program or to meet binding limits on GHG emissions for the same monitoring period.

The project activity has been registered as CDM projects titled “Grid Connected Wind Energy Project in Tamil Nadu” (UNFCCC No: 7416).

Project Title: Grid Connected Wind Energy Project in Tamil Nadu

UNFCCC Registration Number: 7416

Crediting period start date: 04/10/2012

Renewal Status: Renewal of crediting period of the CDM has been successfully registered

Duration of 2nd crediting period: 04/10/2019 to 03/10/2026

The same has been verified from the CDM website.

3.2 Methodology Deviations

No methodology deviation has been applied for this monitoring period. Therefore, this section is not applicable to the project

3.3 Project Description Deviations

No deviation has been applied for this monitoring period compared to the project description. Therefore, this section is not applicable.

However, below deviations were considered during previous monitoring periods:

- 1) During the registration, the calibration frequency for the electricity meters was set as once in 3 years. The state utility (TNEB) in practice conducts the accuracy check of all interface meters once in five years. This is done by the state utility which is beyond the control of the project participant. This has been confirmed and verified during previous monitoring periods.
- 2) During the commissioning of the project activity, the state utility had installed energy meters with 0.5s accuracy class which were connected to grid at 33 kV. In accordance with Standards on Installation and Operation of Meters (pg no 15 of 20) of the notification dated 17/03/2006 published by Central Electricity Board, Govt. of India (www.aegcl.co.in/Metering_Regulations_Of_CEA_17_03_2006.pdf), interface meters with 0.5s or better accuracy class needs to be installed if energy meter is connected to above 650 volts and up to 33 kV. Hence, the state utility (TNEB) decided to upgrade the accuracy class of all the energy meters from 0.5s to 0.2s. This is done by the state utility which is beyond the control of the project participant. This has been confirmed and verified during previous monitoring periods.

The above deviations do not impact the applicability of the methodology, additionality or the appropriateness of the baseline scenario, and the project remains in compliance with the applied methodology i.e. ACM0002 version 20. This was confirmed by the VVB and was found appropriate and acceptable.

3.4 Grouped Project

This is not a group project.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

Grid Connected Wind Energy Project in Tamil Nadu Project consists of the operation of a wind power plant of 49.5 MW (cumulative capacity), with 30 number of WTGs each with a rated capacity of 1.65 MW that supply the generated electricity to the Indian national grid. The Project is spread across G.Usulampatti, Mottanoothu, Kothapatti, Shanmuga Sundara Puram & Marikundu villages in Theni district of Tamil Nadu state in India. The project has been operational since 25/06/2010 as per the commissioning of first WTG installed under the project activity which was verified against the commissioning certificates /23/. Under the current monitoring period from 01/10/2021 to 31/12/2022, the project has delivered 85,385.95 MWh of electricity to the Indian national grid as verified from the invoices/19/ thereby offsetting an equivalent amount of electricity generated from fossil fuel-based plants, which has resulted in corresponding emission reductions of 79,803 tCO₂e.

It has also been verified as per the guidelines in ACM0002 Version 20/05/ that the calculations for the GHG emission reductions is done in accordance with the aforesaid methodology. The project activity is part of registered CDM Project activity, and the concerned monitoring period was not found overlapping with any of the VCS or CDM verifications so far, which was confirmed by the declaration /07/ provided by the PP. The total emission reductions applied for the current monitoring period under VCS are 79,803 tCO₂e and are not accounted in any other program. Therefore, the assessment team concluded that all physical features of the project activity in the registered PD are in place and the project participant has operated the project activity as per the registered PD /01/.

Assessment team concludes the following:

1. There are no material discrepancies between project implementation and the project description provided in the registered PD/01/.
2. The monitoring plan is implemented completely and monitoring system (i.e., process and schedule for obtaining, recording, compiling, and analysing the monitored data and parameters) is appropriate.
3. There is no material discrepancies between the actual monitoring system, and the monitoring plan set out in the project description and the applied methodology/05/.
4. It has been confirmed by the assessment team that PP is not claiming emission reductions for the same monitoring period in both the programmes. PP has confirmed and provided a no double counting declaration for the same/07/.
5. The project has not received or sought any other form of environmental credit or has become eligible to do so since validation or previous verification.
6. The GHG emission reductions or removals generated by the project have not included in an emissions trading program or any other mechanism that includes GHG allowance trading/07/.
7. The project activity is complying with indicators for sustainable development as discussed in detail under section 1.11 of MR.

During the current monitoring period, the project activity exported 85,385.95 MWh of electricity to the national grid of Turkey as verified from the invoices /20/ which has resulted in a reduction of 79,803 tCO₂e GHG emissions as verified from the ER sheet/03/. The assessment team conducted an on-site visit to verify the implementation of the monitoring plan as per the registered PD/1/. It was confirmed through the interview of the PP and monitoring personnel that the quantity of net electricity generation supplied by the project plant to the grid is calculated as difference between:

- (a) the quantity of electricity supplied by the project plant/unit to the grid.
- (b) the quantity of electricity the project plant/unit from the grid, both reliably monitored and invoiced based on calibrated HPL and Genus electricity meters.

4.2 Safeguards

4.2.1 No Net Harm

No negative environmental and social impacts have been identified because of the project development and implementation. According to the relevant Indian Regulations, no Environmental Impact Assessment was required for wind power projects. Since this project is a grid-connected renewable energy power plant which involves generation of electricity through wind power, it does not have any negative environmental and socio-economic impacts.

4.2.2 Local Stakeholder Consultation

Local Stakeholder Consultation (LSC) meeting was held at a village nearby the project the local stakeholders on 18/02/2010/1/, with the objective of gathering comments and concerns from the stakeholders.

During the on-site site visit, it was confirmed by PP through interviews and also cross-checked by assessment team that a grievance logbook is maintained at the plant site and no grievance has been registered during the current monitoring period/22/.

4.3 AFOLU-Specific Safeguards

Not applicable since this project is a non-AFOLU project.

4.4 Accuracy of GHG Emission Reduction and Removal Calculations

The emission reductions are based on the introduction of renewable energy (solar power plants) by the project activity.

The emission reduction calculation is accurate from the point of data collection, transfer and the formulas applied are in accordance with the applied methodology/05/ and registered PD/01/.

The default values applied for calculations were consistent to the registered PD/01/.

The data transfer from the monthly generation sheets to final emission reduction calculation sheet/03/ has been transparently described and followed. The final values are reproducible, and all the calculation are linked and clearly presented in the emission reduction calculation sheet/03/.

The assessment team is able to conclude that the monitoring for the concerned period has been done in accordance with the procedures laid in the registered documents and the resulting emission reductions are measurable and conservative.

4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

The emission reductions calculations for this verification were verified as per the monitoring plan against all the necessary evidence as listed under Appendix II of the verification report, that were found to be appropriate and reliable sources of information. The information was also cross checked through the received documents and interviews conducted and observations made during the on-site visit conducted by the assessment team.

The assessment team confirms that appropriate methods and formulae for calculating baseline emissions have been followed. The assumptions, emission factors and default values that were applied in the calculations are justified. The actual emission reduction achieved during the current monitoring period is lesser than the estimated amount of emission reductions at the time of validation, therefore no further assessment was required. All the data were made available and have been monitored as per the required monitoring frequency. The means of verification for the values of parameters, used for baseline emission calculation, is described above in previous sections.

Parameters available at the time of Validation:

Parameter	Value	VB Assessment
$EF_{grid,OM,y}$	0.9568 tCO ₂ /MWh	CO ₂ emission factor of the grid is calculated in accordance with “Tool to calculate the emission factor for an electricity system”/11/. The value shall be constant for the entire second crediting period. The value was found to be consistent with the PD/01/ and across the MR/02/.
$EF_{grid,BM,y}$	0.8682 tCO _{2e} /MWh	CO ₂ emission factor of the grid is calculated in accordance with “Tool to calculate the emission factor for an electricity system”/11/. The value shall be constant for the entire second crediting period. The value was found to be consistent with the PD/01/ and across the MR/02/.

EF _{grid,CM,y}	0.9346 tCO _{2e} /MWh	CO₂ emission factor of the grid is calculated in accordance with “Tool to calculate the emission factor for an electricity system”/11/. The value shall be constant for the entire second crediting period. The value was found to be consistent with the PD/01/, across the MR/02/ and the ER sheet/03/.
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Parameters monitored during the Verification:

Parameter	EG _{facility,y} Quantity of net electricity generation supplied by the project plant/unit to the grid in year y	
Means of verification	Criteria/ Requirements	Assessment/observations
	Measuring/Reading/Recording Frequency	The parameter is monitored continuously and recorded monthly for the estimation of GHG Emission Reductions. The parameter is being monitored continuously through the main HPL and Genus meter with Accuracy class 0.2S located near each WTG.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes/ No)	Yes, the frequency is in-line to the registered monitoring plan/01/
	Monitoring Equipment	Electricity meters details are mentioned in Appendix V of this report. The meter details were cross verified at the time of on-Site Audit and the geotagged meter pictures were shared by the PP from the site/20/.

	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	As per the MR, the accuracy of the electricity meters is 0.2s and has also been verified during the on-site inspection/21/ and meter pictures/19/. The calibration frequency of the meters as per Indian regulation is confirmed to be once in 5 years. The calibration of the meters will be done by the state utility. Electricity meters details and their calibration dates are mentioned in Appendix V of this report. The calibration dates were verified with the calibration certificates/08,09/. However, there is a gap in the calibration of the electricity meters. As a result, a conservative deduction of meters error confidence interval was applied to the import and export electricity generation value, corresponding to the accuracy class of the meters: 0.2S ($\pm 0.2\%$) for the months where there is a gap in calibration. This has been applied according to the paragraph 366 of CDM VVS/25/.
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes, the accuracy of the monitoring equipment is 0.2s, which is in accordance with the monitoring plan/01/. This has been verified from the calibration certificates/08,09/ provided by the PP. Therefore, the VVB concluded that meters reading obtained during the monitoring period were accurate and thus found acceptable by the VVB.
	Calibration frequency/interval:	The calibration frequency of the meters as per Indian regulation is confirmed to be once in 05 years. The calibration of the meters will be done by the state utility.

		The calibration dates were verified with the calibration certificates/08,09/. However, there is a gap in the calibration of the electricity meters. As a result, a conservative deduction of meters error confidence interval was applied to the import and export electricity generation value, corresponding to the accuracy class of the meters: 0.2S ($\pm 0.2\%$) for the months where there is a gap in calibration. This has been applied according to the paragraph 366 of CDM VVS/25/.
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, pending until the findings are closed or as per the manufacturer's specifications?	As per the monitoring plan in the registered PD/01/, meter is supposed to be calibrated once in 5 years. However, there is a gap in the calibration of the electricity meters. As a result, a conservative deduction of meters error confidence interval was applied to the import and export electricity generation value, corresponding to the accuracy class of the meters: 0.2S ($\pm 0.2\%$) for the months where there is a gap in calibration. This has been applied according to the paragraph 366 of CDM VVS/25/
	Is the calibration of measuring equipment carried out by an accredited person or institution?	The calibration of the meters will be done by the state utility TNEB.
	Is(are) calibration(s) valid for the whole reporting period?	There is a gap in the calibration of the electricity meters. As a result, a conservative deduction of meters error confidence interval was applied to the import and export electricity generation value, corresponding to the accuracy class of the meters: 0.2S ($\pm 0.2\%$) for the months where there is a gap in calibration.

		This has been applied according to the paragraph 366 of CDM VVS/25/
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes, the calibration has been carried out for a measuring range comparable with the range for which measurements have been carried out.
	How were the values in the monitoring report verified?	Cumulative value of $EG_{Facility,y}$ for entire monitoring period is reported in the monitoring report, however the monthly values are reported in the ER calculation sheet/03/. The monthly values were verified from invoices/20/. Value of this parameter for the current monitoring period was verified as net 85,385.95 MWh.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the adequate QA/QC procedures were followed by the PP. The data transfer process for the said parameter is in accordance with the registered monitoring plan/01/and applied methodology/05/.
Finding	CAR 02, CAR 03, CAR 05 and CAR 06 were raised and resolved.	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan. The verification team is able to confirm that the project is implemented as per the registered PD and there is no discrepancy observed between the actual monitoring system and the monitoring plan set out in the project description and the applied methodology outlined in the registered VCS PD/01/. The emission reduction calculation for the project activity is based on the electricity supplied by the wind farm. Since 100% data was verified, the assessment team can ascertain that the values taken for emission reduction calculation are free from material errors.	

The table given above describes how each parameter, which is to be measured according to the monitoring plan, has been verified to confirm that the actual monitoring complies with the monitoring plan, monitoring data has been thoroughly assessed and that the sampling requirement are met.

4.6 Non-Permanence Risk Analysis

Not applicable for the project activity.

5 VERIFICATION OPINION

Earthood Services Private Limited (ESPL), contracted by CLP Wind Farms (Theni – Project II) Private Limited has performed the independent verification of the emission reductions for the VCS project activity (VCS ID-911) “Grid Connected Wind Energy Project in Tamil Nadu” for the monitoring period 01/10/2021 to 31/12/2022 (both days included) as reported in the Monitoring Report/02/ Version 1.3 dated 14/04/2024. CLP Wind Farms (Theni – Project II) Private Limited is responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the project activity.

ESPL commenced the verification based on the baseline and monitoring methodology ACM0002, Version 20.0/05/, the monitoring plan contained in the revised VCS PD/01/ Version 3.0 dated 22/08/2022 and VCS guidelines version 4.4/04/. The verification approach of the assessment team is based on the understanding of the risks associated with reporting of GHG emission data and the controls in place to mitigate these.

ESPL planned and performed the verification by obtaining evidence and other information and explanations that ESPL considered necessary to give reasonable assurance that reported GHG emission reductions are fairly stated.

In our opinion the GHG emissions reductions reported for the project activity for the period 01/10/2021 to 31/12/2022 are fairly calculated and stated in the Monitoring Report/02/ Version 1.3 dated 14/04/2024. The GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology ACM0002, Version 20.0/05/, and the VCS standard/04/.

Verification period: From 01/10/2021 to 31/12/2022 (including both days)

Verified GHG emission reductions and removals in the above verification period, broken down by calendar 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)

01/10/2021 to 31/12/2021	6,783	0.00	0.00	6,783
01/01/2022 to 31/12/2022	73,020	0.00	0.00	73,020
Total	79,803	0	0	79,803

According to ex-ante values, a total of 79,803 tCO₂e Emission reductions are estimated for the current MP, and for this Monitoring period the project performed a 43.48% less than expected, it was due to natural meteorological conditions and breakdown of the wind turbines due to blade failure that led to the plant's underperformance which was found acceptable to the assessment team.

Year	Ex-ante emissions reductions/removals	Achieved emissions reductions/removals	Percent difference	Justification for the difference
01/01/2022 - 31/12/2022	141,185	79,803	-43.48%	The difference can be explained by overall lower performance due to the: 1) Due to natural meteorological conditions 2) Breakdown of the wind turbines due to blade failure

Approved by



Dr. Kaviraj Singh

Managing Director

Earthood Services Private Limited

Date: 29/02/2024

Place: Gurgaon, Haryana

APPENDIX I: ABBREVIATIONS

Abbreviations	Full texts
BE	Baseline Emission
CA	Corrective Action / Clarification Action
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
CL	Clarification Request
VVB	Validation and Verification Body
ER	Emission Reduction
ESPL	Earthood Services Private Limited
FAR	Forward Action Request
GHG	Greenhouse gas(es)
MP	Monitoring Plan
MR	Monitoring Report
PA	Project Activity
PE	Project Emission
PP	Project Participant
QA/QC	Quality Assurance / Quality Control
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Verified Carbon Standard
VCS-PD	VCS – Project Description
VCU	Verified Carbon Unit
XLS	Emission Reduction Calculation Spread Sheet
SLD	Single Line Diagram
JMR	Joint Meter Reading
TNEB	Tamil Nadu Electricity Board
EIA	Environment Impact Assessment

APPENDIX II: REFERENCES

S.No.	Title of document	Version	Provided by
1.	Registered Joint VCS PD MR	Version 3 dated:22/08/2022	VCS
2.	VCS Monitoring Report (Final)	Version 1.3 dated 14/02/2024	PP
3.	ER spread sheet	-	PP
4.	a) VCS Standard b) VCS programme guide	Version 4.5 Version 4.4	VCS
5.	Methodology: ACM0002. "Largescale Consolidated Methodology: Grid-connected electricity generation from renewable sources"	Version 20.0	CDM
6.	VCS Project Webpage: https://registry.verra.org/app/projectDetail/VCS/909	-	VCS
7.	No double counting declaration by PP	-	PP
8.	Main Electricity meter calibration certificates	-	PP
9.	Back-up Electricity meter calibration certificates	-	PP
10.	Tool 01- Tool for the demonstration and assessment of additionality	Version 6.0	CDM
11.	Tool 07-Tool to calculate the emission factor for an electricity system	Version 7.0	CDM
12.	Guidelines on the assessment of Investment Analysis	Version 5.0	
13.	Guidelines on demonstration of and assessment of prior consideration of the CDM	Version 4.0	
14.	Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period	Version 3.0,1	
15.	Joint Validation and Verification Report	Version 2.0 Dated- 22/08/2022	VCS
16.	Geographical co-ordinate for project activity	04/04/2023	PP
17.	Manufacturer specification of wind turbines		PP
18.	Power Purchase Agreements		PP
19.	Geo tagged plant site photos	Dated- 04/04/2023	PP
20.	Joint Meter Reading Report / Energy Generation Statement	2022	TNEB
21.	VVB On-site Site Visit records	04/04/2023	VVB
22.	Grievance Logbook		PP

23.	Validation and Verification Manual V3.2	Version 3.2 Dated- 19/10/2016	VCS
24.	WTG Commissioning Certificates	-	PP
25.	CDM VVS https://cdm.unfccc.int/sunsetcms/storage/contents/stored-file-20210921115831128/reg_stan06_v03.0.pdf	Version 3	-

APPENDIX III: COMPETENCE STATEMENT

Competence Statement			
Name	Vishnu S Panicker		
Education	M.Sc (Sustainable Development and Environment Management) B.Sc (Forestry)		
Experience	1+ years		
Field	Forestry and Environment		
Approved Roles			
Team Leader	Yes (VM)		
Validator	Yes (VM)		
Verifier	Yes (VM)		
Local expert	Yes (India)		
Financial Expert	NO		
Technical Reviewer	NO		
TA Expert (X.X)	Yes (VM TA 1.2, 3.1)		
Reviewed by	Shifali Guleria, Quality Manager	Date	09/06/2023
Approved by	Deepika Mahala, Technical Manager	Date	09/06/2023

Competence Statement	
Name	Shifali Guleria
Education	M.Sc. (Environmental Studies and Resource Management), TERI University
Experience	3+ year
Field	Climate Change
Approved Roles	
Team Leader	YES
Validator	YES
Verifier	YES
Methodology Expert	YES (AMS-I.A., AMS-II.G., AMS-II.E., AMS-III.A.V., AMS-I.D, ACM0002)

Local expert	YES		
Financial Expert	NO		
Technical Reviewer	YES		
TA Expert	YES (1.2, 3.1)		
Reviewed by	Deepika Mahala	Date	18/02/2022
Approved by	Ashok Gautam	Date	18/02/2022

Competence Statement			
Name	Kerwyn Donald Dsouza		
Education	B. E- Environmental Engineering		
	M. Tech- Renewable Energy Engineering and Management		
Experience	7 Years		
Field	Renewable Energy, Climate Change, Environment		
Approved Roles			
Team Leader	NO		
Validator	YES		
Verifier	YES		
Local expert	YES (India)		
Financial Expert	NO		
Technical Reviewer	NO		
TA Expert (X.X)	YES (TA 1.2)		
Reviewed by	Shifali Guleria (Quality Manager)	Date	18/01/2024
Approved by	Deepika Mahala (Technical Manager)	Date	18/01/2024

APPENDIX IV: OVERVIEW FINDINGS

Table 1. Remaining FAR from validation and/or previous verification

FAR ID	01	Section no.	Date : DD/MM/YYYY
Description of FAR			
.X			
Project participant response			Date : DD/MM/YYYY
X			
Documentation provided by project participant			
X			
DOE assessment			Date: DD/MM/YYYY
X			

Table 2. CL from this verification

CL ID	01	Section no.	1.1, 1.11	Date : 30/03/2023
Description of CL				
In PDD version 3, it is clearly stated that ' The electricity generated from the wind farm will be exported to the Integrated Indian electricity grid' and 'Each grid covers several states. However, Govt. of India has decided to integrate all the regional grid systems and thus, regional grids are not existed now.' Verification team found that in section 1.1 and 1.11, PP has mentioned Southern regional grid and Western regional grid. PP is requested to address the inconsistency.				
Project participant response				Date : 20/11/2023
Since Govt. of India has decided to integrate all the regional grid systems, PP has revised section 1.11 in accordance with guidelines of Integrated Indian grid.				
Documentation provided by project participant				
Revised MR version 1.1				
DOE assessment				Date : 20/12/2023
The verification team reviewed the revised MR and found that the PP has revied the statement to "The generated electricity is being fed into the Integrated Indian grid". Hence, CL #1 is closed.				

CL ID	02	Section no.	1.10	Date : 30/03/2023
Description of CL				
According to the section 1.10 of VCS-MR template, PP is requested to clarify why the details about scope 3 emissions is not mentioned in the monitoring report.				
Project participant response				Date : 20/11/2023
Since the project activity is a registered Wind Power Project. Hence supply chain (scope 3) emissions are not applicable. The same has been updated in revised MR.				
Documentation provided by project participant				
Revised MR version 1.1				
DOE assessment				Date : 20/12/2023
The verification team reviewed the revised MR and found that the PP has included details about scope 3 emissions, which is not applicable for this project activity. Hence, CL #2 is closed.				

Table 3. CAR from this verification

CAR ID	01	Section no.	1.7	Date : 30/03/2023
Description of CAR				
PP is requested to address the following in the section 1.7 of the Monitoring report:				
a. Verification team couldn't verify the location of the wind turbines in Google map from the given location in the table under section 1.7 of MR. PP is requested to check orientation of all the latitude and longitude mentioned. b. For WEG T118 in Loc.64, the date of commission is inconsistent with the commissioning certificate provided. PP is requested to address the inconsistency.				
Project participant response				Date : 20/11/2023
PP has updated latitude and longitude details of all wind turbines in revised MR.				
PP has revised commissioning date of WEG 118 in loc 64 in revised MR. Error is regretted.				
Documentation provided by project participant				
Revised MR 1.1				
DOE assessment				Date : 20/12/2023
The verification team reviewed section 1.7 the revised MR and found that:				
a. The PP has updated table regarding the project location. The geographic coordinates of the wind turbines are now accurate as checked via google maps by the verification team.				
Hence, this finding is closed.				
b. The PP has revised the commissioning date of WEG 118 in loc 64, which is now consistent with the commissioning certificate.				
Hence, this finding is closed.				

CAR ID	02	Section no.	5.4	Date : 30/03/2023
Description of CAR				
Verification team found that value mentioned in the 'Baseline emissions or removal' column of the table under section 5.4 is inconsistent with the value mentioned in the 'Emission reduction' tab of the ER calculation sheet. PP is requested to address the inconsistency.				
Project participant response				Date : 20/11/2023
PP has revised 'Baseline emissions or removal' column of the table under section 5.4 as per correct value mentioned in the 'Emission reduction' tab of the ER calculation sheet.				
Documentation provided by project participant				
Revised MR version 1.1				
DOE assessment				Date : 20/12/2023
The verification team reviewed section 5.4 the revised MR and found that the value of baseline emissions is inconsistent with the value mentioned in the ER Sheet.				
Hence, this finding is Open.				
Project participant response				Date : 26/12/2023
PP has revised section 5.4 the revised MR as per the baseline emissions value mentioned in the ER Sheet.				
Documentation provided by project participant				
MR version 1.2				
DOE assessment				Date: 05/02/2024
The verification team reviewed section 5.4 the revised MR version 1.2 and found that the value of baseline emissions is now consistent with the value mentioned in the ER sheet.				
Hence, this finding is closed.				

CAR ID	03	Section no.	ER sheet	Date : 30/03/2023
Description of CAR				
Following are the inconsistency found in the ER sheet: - Verification team couldn't find the import value of Oct-21 for HTSC T92 in the 'Generation' tab of the ER sheet. PP is requested to address the issue. - PP is requested to provide the Generation data of October 2021 for the HTSC T103, T105 and T122. - Verification team found that the export and import value in the 'Generation' tab is inconsistent for the following: - T121 – October 2021 - T116 – July 2022 - Verification team found that the monitoring period mentioned in the Cell C41 of the 'Generation' Tab is inconsistent with the dates of current monitoring period. PP is requested to address the inconsistency. - Verification team found that for some HTSCs there are no export value during some months. PP is requested to provide breakdown details for the monitoring period.				
Project participant response				Date : 20/11/2023
- PP has provided import value of Oct-21 for HTSC T92 in the 'Generation' tab of the ER sheet. PP has also provided TNEB statement of oct 21 for verification purpose. - PP has provided the Generation data of October 2021 for the HTSC T103, T105 and T122. - PP has revised export and import value in the 'Generation' tab as per below TNEB statements: - T121 – October 2021 - T116 – July 2022 - PP has deleted Cell C41 of the 'Generation' Tab which was inconsistent with the dates of current monitoring period. - There were some WEGs showing zero export values due to technical faults e.g. blade failure etc. PP has provided breakdown details for the monitoring period to DOE.				
Documentation provided by project participant				
MR version 1.1				
ER sheet version 1.1				
DOE assessment				Date : 20/12/2023
The verification team reviewed section 1.7 the revised MR and found that: - The PP has provided the VVB with the generation statement of Oct-21 for HTSC T92 and is now consistent with the corresponding value in the ER sheet. Hence, this finding is closed. - The verification team has not received the generation invoices of October 2021 for the HTSC T103, T105 and T122. PP is kindly requested to provide the invoices. This finding Is Open - The PP has provided the VVB with the TNEB generation statement for T121 – October 2021 and T116 – July 2022. The import and export values are consistent with the corresponding value in the ER sheet. Hence, this finding is closed. - The PP has deleted Cell C41 of the 'Generation' Tab, the dates mentioned in the 'Generation' Tab are now consistent with the dates of the current monitoring period. Hence, this finding is closed. - The verification team has not received the breakdown details for the monitoring period. PP is kindly requested to provide the breakdown details for the current monitoring period. This finding Is Open				
Project participant response				Date : 26/12/2023

PP has below documents to DOE for verification: Generation invoices of October 2021 for the HTSC T103, T105 and T122. Breakdown details for the monitoring period	
Documentation provided by project participant	
Generation invoices of October 2021 for the HTSC T103, T105 and T122. Breakdown details for the monitoring period	
DOE assessment	Date: 05/02/2024
b. The verification team has received the generation invoices of October 2021 for the HTSC T103, T105 and T122 and is able to verify the data with the values in the ER sheet. Hence, this finding is closed.	
e. The VVB was provided with the breakdown details of the wind turbines during the current monitoring period, which was found to be acceptable. Hence, this finding is closed.	

CAR ID	04	Section no.	ER sheet	Date : 30/03/2023
Description of CAR				
PP is requested to address the following comments on the calibration details provided: a. Verification team couldn't confirm the calibration details of main meter and check meter for the following HTSC due to unavailability of documents in the given set of documents: T-90, T-91, T-95, T-96, T-97, T-103, T-109, T-113, T-114, T-117, T-118, T-119 and T-120. b. Verification team couldn't confirm the calibration details of check meter for the following HTSC due to unavailability of documents in the given set of documents: T-100, T-101, T-104, T-116, T-121 and T-122. c. Verification team found inconsistency in the serial number for HTSC T-121 as both the main and check meter is having the same serial number. PP is requested to address the inconsistency. d. The monitoring period is from 01-Oct-2021 to 31-Dec-2022 but the calibration details provided for all the main and check meter of HTSC doesn't cover the monitoring period. PP is requested to provide the calibration details that is valid for the entire monitoring period.				
Project participant response				Date : 20/11/2023
a. PP has provided calibration details of main meter and check meter for the following HTSCs to DOE: T-90, T-91, T-95, T-96, T-97, T-103, T-109, T-113, T-114, T-117, T-118, T-119 and T-120. b. PP has provided calibration details of check meter for the following HTSCs to DOE: T-100, T-101, T-104, T-116, T-121 and T-122. c. PP has updated main and check meter serial number of HTSC T-121 in revised MR. d. Since the monitoring period of project activity is from 01-Oct-2021 to 31-Dec-2022, PP has provided latest calibration certificates conducted in year 2023 along with validity for all the main and check meters. The previous calibration of meters was conducted in year 2017. There certificates were verified and found appropriate by VCS verifier during previous monitoring period (25/06/2020 - 30/09/2021). PP has provided previous calibration certificates to DOE on sample basis.				
Documentation provided by project participant				
MR version 1.1				
DOE assessment				Date : 20/12/2023

a. The verification team has received the calibration certificates for the meters. However, the verification has not received the calibration certificate of T-94 main meter and T-108 check meter. PP is requested to provide the calibration certificates for the two meters. This finding Is Open b. The verification team has received the calibration certificates for the meters. However, the verification has not received the calibration certificate of T-108 check meter. PP is requested to provide the calibration certificates for the two meters. This finding Is Open c. The verification team reviewed Appendix-1 of the revised MR and found that the PP has updated the serial numbers of the main and check meters of T-121 which is now consistent with the provided calibration certificates. Hence, this finding is closed. d. The verification team was provided with the previous calibration certificates conducted in 2017. The meters were then calibrated in 2023 and are valid till 2024 which is beyond the current monitoring period. Hence, this finding is closed.	
Project participant response	Date : 26/12/2023
PP has provided calibration certificates for below meters: T-94 main meter and T-108 check meter	
Documentation provided by project participant	
Calibration certificates	
DOE assessment	Date : 05/02/2024
a. The verification team has received the calibration certificates of HTSC T-94 and is able to verify the date of calibration, however the PP has not provided the calibration certificate of HTSC T-108 check meter. PP is requested to provide the calibration certificate of HTSC T-108 check meter. This finding Is Open b. The PP has not provided the calibration certificate of HTSC T-108 check meter. PP is requested to provide the calibration certificate of HTSC T-108 check meter. This finding Is Open	
Project participant response	Date : 14/02/2024
a) Serial number and Make of the WTG meter T-108 (Check meter) has been updated as per the calibration certificate. b) Calibration certificate for T-108 (Check meter) has been submitted to the VVB.	
Documentation provided by project participant	
DOE assessment	Date : 20/02/2024
a) The verification team reviewed the calibration certificate of the HTSC T-108 check meter. The details of the Serial number and Make are now consistent mentioned in the MR. b) The verification team reviewed the calibration certificate of the HTSC T-108 check meter. The details of the Serial number and Make are now consistent mentioned in the MR Hence, CAR #04 is closed.	

CAR ID	05	Section no.	5.4	Date : 20/12/2023
Description of CAR				
In section 5.4 of the MR, PP's justification for the actual ER to be less than ex-ante ER is less wind availability. But during onsite visit, Verification team found that there was breakdown for some of the turbines during the monitoring period. PP is requested to provide more justifications for the difference in ex-ante emission reductions and achieved emissions reductions for the current monitoring period				
Project participant response				Date : 26/12/2023

PP has provided detailed justification for the difference in ex-ante emission reductions and achieved emissions reductions for the current monitoring period.	
Documentation provided by project participant	
MR version 1.2	
DOE assessment	Date : 05/02/2024
The PP has updated the table for the justification for the difference between the actual ER to be less than ex-ante ER by adding “breakdown of wind turbines due to blade failure caused lower generation during current monitoring period”, which is found to be acceptable by the VVB. Hence, this finding is closed.	

CAR ID	06	Section no.	Appendix-1	Date : 05/02/2024
Description of CAR				
1. From the calibration certificates provided to the VVB, it was found that most calibrations were done on 25/01/2023, 20/02/2023, 21/02/2023, 22/02/2023, 25/01/2023, 10/04/2023, and the previous calibrations were done in 2017. From the QA/QC procedures for electricity meters for the parameter EGfacility,y mentioned in the MR, it is stated that “Frequency of calibration: Once in five years”. Therefore, there is a gap in calibration for most of the electricity meters as the validity of the calibration expires within the current monitoring period (01/10/2021 to 31/12/2022). Hence, the PP shall apply correction factor as per mentioned in CDM validation and verification standard for project activities, v3.0 – para 366 “Applying the maximum permissible error of the instrument to the measured values taken during the period between the scheduled date of calibration and the actual date of calibration, if the results of the delayed calibration do not show any errors in the measuring equipment, or if the error is smaller than the maximum permissible error”. 2. PP is kindly requested to update the validity of the calibration of the meters. The validity is for 1 year according to the latest calibration certificates. 3. As per QA/QC procedures for electricity meters for the parameter EGfacility,y mentioned in the MR, it is stated that “Frequency of calibration: Once in five years”. According to the latest calibration certificates, the validity of calibration is for 1 year. PP is kindly requested clarify if the validity of the calibration is one year or for 5 years. 4. The serial number for T-109 main meter is inconsistent with the provided calibration certificate. PP is requested to address the inconsistency.				
Project participant response				Date : 14/02/2024
1. There was a calibration delay found in multiple WTG meters and the error factor for the delay has been applied in the ER sheet. Values of net generation and ER reduced has been revised in all the documents. 2. The duration of the calibration has been corrected in the updated MR and now the validity has been revised to 5 years. 3. As per registered VCS PD and monitoring plan, the validity of all the meters is five and the same has been revised in the Appendix-1 of MR. In line with para 18.1.b of the notification dated 17/03/2006 published by Central Electricity Board, Govt. of India (www.aegcl.co.in/Metering_Regulations_Of_CEA_17_03_2006.pdf), testing and calibration has been done by state utility which is beyond the control of Project Participant. Therefore, the frequency of meter testing is once in five years. 4. The serial number has been updated for the WTG T-109 (main meter) as per the calibration certificate.				
Documentation provided by project participant				
Calibration certificate (T-109), MR version 1.3				
DOE assessment				Date : 20/02/2024

- 1) The assessment team has reviewed the revised ER sheet and found that an error factor corresponding to the accuracy class of the meters: 0.2S ($\pm 0.2\%$) has been applied for the import and export electricity values for the months where there was a calibration delay for each WTG meter. Hence, the PP has applied the maximum permissible error factor which is found to be appropriate and acceptable.
- 2) The PP has updated the dates till the calibration of the meters are valid. The validity is in line with what is mentioned in the PDD which is 5 years.
- 3) The VVB is satisfied with the explanation of the PP regarding the validity of the calibration of the electricity meters. The validity is 5 years and is consistent with what is mentioned in the PDD.
- 4) The PP has updated the serial number for T-109 main meter. It is now consistent with the provided calibration certificate.

Hence, CAR# 06 is closed.

Table 4. FAR from this verification

FAR ID	Section No.	Date : DD/MM/YYYY
Description of FAR		
X		
Project participant response		Date : DD/MM/YYYY
X		
Documentation provided by project participant		
X		
DOE assessment		Date: DD/MM/YYYY
X		

APPENDIX V: CALIBRATION DETAILS

It was found that there is a gap in calibration for most of the electricity meters and the PP has applied an error factor for the import and export electricity values for the months where there was a calibration delay for each WTG meter. This was found to appropriate and acceptable by the VVB.

HTSC Number	Meter Type	Meter Details				
		Sr. No.	Previous Calibration Date	Latest Calibration Date	Validity	Class
T-90	Main Meter	HPL624813	23-Feb-17	22-02-2023	21-02-2028	0.2s
	Check Meter	HPL624819	22-Feb-17	22-02-2023	21-02-2028	0.2s
T-91	Main Meter	HPL624812	25-Feb-17	22-02-2023	21-02-2028	0.2s
	Check Meter	HPL624817	25-Feb-17	22-02-2023	21-02-2028	0.2s
T-92	Main Meter	HPL624814	24-Feb-17	21-02-2023	20-02-2028	0.2s
	Check Meter	HPL624978	24-Feb-17	21-02-2023	20-02-2028	0.2s
T-93	Main Meter	HPL624972	24-Feb-17	21-02-2023	20-02-2028	0.2s
	Check Meter	HPL624976	24-Feb-17	21-02-2023	20-02-2028	0.2s
T-94	Main Meter	HPL624971	24-Feb-17	21-02-2023	20-02-2028	0.2s
	Check Meter	HPL624975	24-Feb-17	21-02-2023	20-02-2028	0.2s
T-95	Main Meter	HPL624973	25-Feb-17	21-02-2023	20-02-2028	0.2s
	Check Meter	HPL624977	25-Feb-17	21-02-2023	20-02-2028	0.2s
T-96	Main Meter	HPL624979	22-Feb-17	21-02-2023	20-02-2028	0.2s
	Check Meter	HPL624980	22-Feb-17	21-02-2023	20-02-2028	0.2s
T-97	Main Meter	HPL624820	22-Feb-17	22-02-2023	20-02-2028	0.2s
	Check Meter	HPL624974	22-Feb-17	22-02-2023	20-02-2028	0.2s
T-98	Main Meter	HPL625141	23-Mar-17	21-02-2023	20-02-2028	0.2s
	Check Meter	HPL625146	23-Mar-17	21-02-2023	20-02-2028	0.2s
T-99	Main Meter	HPL625144	24-Mar-17	21-02-2023	20-02-2028	0.2s
	Check Meter	HPL625150	23-Mar-17	21-02-2023	20-02-2028	0.2s
T-100	Main Meter	GENUS 4322544	29-May-17	21-02-2023	20-02-2028	0.2s
	Check Meter	HPL 3033738	08-Dec-17	21-02-2023	20-02-2028	0.2s

HTSC Number	Meter Type	Meter Details				
		Sr. No.	Previous Calibration Date	Latest Calibration Date	Validity	Class
T-101	Main Meter	GENUS 4321972	30-May-17	25-01-2023	24-01-2028	0.2s
	Check Meter	HPL3033737	08-Dec-17	25-01-2023	24-01-2028	0.2s
T-102	Main Meter	HPL625145	24-Mar-17	20-02-2023	19-02-2028	0.2s
	Check Meter	HPL625149	24-Mar-17	20-02-2023	19-02-2028	0.2s
T-103	Main Meter	23003966	01-Mar-16	10-04-2023	09-04-2028	0.2s
	Check Meter	23003991	01-Mar-16	10-04-2023	09-04-2028	0.2s
T-104	Main Meter	HT2180069	30-May-17	25-01-2023	24-01-2028	0.2s
	Check Meter	HPL 3033733	08-Dec-17	25-01-2023	24-01-2028	0.2s
T-105	Main Meter	HPL624853	22-Mar-17	25-01-2023	24-01-2028	0.2s
	Check Meter	HPL624860	22-Mar-17	25-01-2023	24-01-2028	0.2s
T-106	Main Meter	HPL624856	22-Mar-17	25-01-2023	24-01-2028	0.2s
	Check Meter	HPL624859	27-Feb-17	25-01-2023	24-01-2028	0.2s
T-107	Main Meter	HPL625142	22-Mar-17	20-02-2023	19-02-2028	0.2s
	Check Meter	HPL625148	23-Mar-17	20-02-2023	19-02-2028	0.2s
T-108	Main Meter	HPL625143	23-Mar-17	20-02-2023	19-02-2028	0.2s
	Check Meter	HPL625147	23-Mar-17	20-02-2023	19-02-2028	0.2s
T-109	Main Meter	HT2180068	27-Feb-17	20-02-2023	19-02-2028	0.2s
	Check Meter	HPL624855	27-Feb-17	20-02-2023	19-02-2028	0.2s
T-113	Main Meter	HPL624811	21-Feb-17	22-02-2023	21-02-2028	0.2s
	Check Meter	HPL624816	21-Feb-17	22-02-2023	21-02-2028	0.2s
T-114	Main Meter	HPL624815	22-Feb-17	21-02-2023	20-02-2028	0.2s
	Check Meter	HPL624818	21-Feb-17	21-02-2023	20-02-2028	0.2s
T-115	Main Meter	HPL625081	23-Feb-17	22-02-2023	21-02-2028	0.2s
	Check Meter	HPL625089	23-Feb-17	22-02-2023	21-02-2028	0.2s
T-116	Main Meter	5840071	29-May-17	25-01-2023	24-01-2028	0.2s
	Check Meter	HPL 3033735	08-Dec-17	25-01-2023	24-01-2028	0.2s
T-117	Main Meter	HPL624741	25-Feb-17	25-01-2023	24-01-2028	0.2s

HTSC Number	Meter Type	Meter Details				
		Sr. No.	Previous Calibration Date	Latest Calibration Date	Validity	Class
	Check Meter	HPL624747	25-Feb-17	25-01-2023	24-01-2028	0.2s
T-118	Main Meter	HPL624857	27-Feb-17	20-02-2023	19-02-2028	0.2s
	Check Meter	HPL624858	27-Feb-17	20-02-2023	19-02-2028	0.2s
T-119	Main Meter	HPL624743	25-Feb-17	20-02-2023	19-02-2028	0.2s
	Check Meter	HPL624745	25-Feb-17	20-02-2023	19-02-2028	0.2s
T-120	Main Meter	HPL624748	27-Feb-17	25-01-2023	24-01-2028	0.2s
	Check Meter	HPL624750	25-Feb-17	25-01-2023	24-01-2028	0.2s
T-121	Main Meter	3033734	29-May-17	25-01-2023	24-01-2028	0.2s
	Check Meter	GENUS 4322548	27-Feb-17	25-01-2023	24-01-2028	0.2s
T-122	Main Meter	HT180300	30-May-17	25-01-2023	24-01-2028	0.2s
	Check Meter	HPL 3033748	08-Dec-17	25-01-2023	24-01-2028	0.2s