



250 MW WIND POWER PROJECT BY MYTRAH ENERGY

Document Prepared By



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Summary:

VKU Certification Pvt. Ltd. (hereafter referred as VKU) was commissioned by **Infinite Environmental Solution LLP** (hereafter referred as Client) and **Mytrah Vayu (Sabarmati) Pvt. Ltd.** (hereafter referred as PP), has verified the greenhouse gas emission reductions reported for the project Activity “**250 MW Wind Power Project By Mytrah Energy**” (VCS ID 2020), which is 250 MW plant in Tamil Nadu. This is the sixth verification of the first crediting period from 30-January-2019 to 29-January-2029 (Inclusive of both dates).and covering monitoring period from 01-April-2022 to 30-June-2023 (Inclusive of both dates) with regard to the relevant requirements for VCS Standard; Version 4.4 /39/and 4.5 /07/.

Purpose of Verification: The purpose of the verification is to have an independent review of ex-post determination of the monitored reductions in GHG emission reductions and verify that the monitoring methodology was implemented according to the monitoring plan and monitoring data used to confirm the reductions in anthropogenic emissions by sources is sufficient, definitive and presented in a concise and transparent manner from 01-April-2022 to 30-June-2023 (Inclusive of both dates) under first crediting period from 30-January-2019 to 29-January-2029 (Inclusive of both dates).

The verification scope of the project is:

- To verify that the project is implemented as described in the registered VCS Joint PD&MR¹ /04/
- To assess the project's compliance with other relevant rules including the host country legislation.
- To confirm that the monitoring system is implemented and fully functional to generate voluntary carbon units without any double counting.
- To establish that the data reported are accurate, complete, consistent, transparent and free of material error or omission by checking the monitoring records and the emissions reduction calculation.
- To verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan;
- To evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement.

Verification was conducted using VKU's procedures in line with the requirements specified in the VCS Program Guide; Version 4.4/06/, VCS Standard; Version 4.4/39/ and 4.5²/07/, VCS Validation and Verification Manual; Version 3.2/08/, CDM Validation and Verification Standard; Version 3.0/09/, and applying standard auditing techniques.

The verification consisted of desk review, on-site assessment and the resolution of outstanding issues and the issuance of the final verification report and certification.

VKU followed the rule-based approach to perform this verification. During course of verification, records related to operation, monitoring, and GHG emission reduction calculation of the VCS project activity are verified in relation to all relevant VCS requirements, and the applied baseline and monitoring methodology. A total of **09** findings were raised, which includes: **05** Corrective Action Request (CARs); **04** Clarification Requests (CLs) and **00** Forward Action Requested (FAR). All the findings were successfully resolved by the PP. The same has been discussed in **Appendix-B** of this verification report. The verification team ensured that the reported emission reductions are complete and accurate in accordance with applicable VCS requirements in order to be certified therefore, the verification team has detected no further uncertainties.

The GHG emission reductions were calculated on the basis of the approved methodology (**ACM0002**) "**Grid-connected electricity generation from renewable sources**", **Version 19.0** ³ /12/ and the

¹ <https://registry.terra.org/app/projectDetail/VCS/2020>

² Only norms of VCS Standard; Version 4.5, which are immediately effective from 29-August-2023 are referred along with the VCS Standard; Version 4.4 for verification of this project activity.

³ <https://cdm.unfccc.int/UserManagement/FileStorage/58IAGB7SZUDE02VN6LYM30K41HFPRO>

monitoring plan included in the registered VCS Joint PD&MR; **Version 02 dated 20-December-2019/03/**

The project has also referred to following documents.

- VCS: Monitoring report Template; Version 4.2/11/
- VCS:VCS Program Guide; Version 4.4 dated 29-August-2023/06/
- VCS Program Definitions; Version 4.4 dated 29-August-2023 /10/
- VCS:VCS Stanadard; Version 4.4 dated 17-January-2023/39/
- VCS:VCS Stanadard; Version 4.5 dated 04-October-2023/07/
- VCS: Validation and Verification manual; Version 3.2 dated 19-October-2016/08/
- Tool 01: Tool for the demonstration and assessment of additionality - Version 07.0.0 (EB 70, Annex 08)⁴/14 /
- Tool 07: Tool to calculate the emission factor for an electricity system⁵ - Version 07.0 (EB 100, Annex 04)/ 13/
- CDM Validation and Verification Standard; Version 3.0 dated 09-September-2021/09/

Summary of the verification conclusion;

In conclusion, it is VKU's opinion that the project activity **"250 MW Wind Power Project By Mytrah Energy"** (VCS ID 2020), meets all relevant requirements for VCS standard and guidelines and correctly applies the baseline and monitoring methodology **ACM0002: Grid-connected electricity generation from renewable sources; Version 19.0/12/**. The monitoring system is in place and the emission reductions are calculated without material misstatement. Hence, VKU is able to certify that the emission reductions from the project during the sixth monitoring period from **01-April-2022 to 30-June-2023** (Inclusive of both dates) under the first crediting period from **30-January-2019 to 29-January-2029** (Inclusive of both dates) amounts to **572,433 tCO₂e**.

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

⁵ <http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf>

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1 INTRODUCTION

1.1 Objective

Infinite Environmental Solutions LLP (hereafter referred as Infinite Solutions) commissioned VKU Certification Pvt Ltd (here after referred as VKU) to carry out the sixth verification of project “**250 MW Wind Power Project By Mytrah Energy**” (VCS ID 2020) in India for the period from **01-April-2022 to 30-June-2023** (Inclusive of both dates) under the **first crediting period** from **30-January-2019 to 29-January-2029** (Inclusive of both dates) for a period of **1 year and 3 months (456 days)**. The project activity follows a renewable crediting period of 10 years, which can be extended a maximum of two times, as outlined in **section 1.6** of VCS Joint Project Description and monitoring report version **2.0 dated 20-December-2019/03/**.

The objectives of this verification exercise are, by review of objective evidence, to establish that:

- To have an independent evaluation of project activity by an accredited validation and verification body against the requirements of the VCS Program Guide; Version 4.4/06/, VCS standard; Version 4.4/39/ and 4.5/07/and UNFCCC criteria for CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting, on the basis of the registered VCS Joint PD&MR /03/
- The project activity has been implemented and operated as per the registered VCS Joint PD&MR/03/ and it's all physical features (technology, project equipment, and monitoring) of the project are in place;
- Monitoring report/01/ and other supporting documents submitted by PP are complete;
- The data is recorded and stored as per the monitoring methodology and approved monitoring plan.
- To confirm that the monitoring system is implemented and fully functional to generate Verified Carbon Units (VCUs) without any double counting/28/
- To establish that the data reported are accurate, complete, consistent, transparent and free of material error or omission by checking the monitoring records and the emissions reduction calculation.

The verification process is conducted with the goal of smooth execution and complete operational effectiveness of the monitoring system, assuring the precise generation of Verified Carbon Units (VCUs) without encountering any double counting/28/. Furthermore, a thorough examination of the monitoring records and emissions reduction calculations was performed to ensure the comprehensiveness, coherence, transparency, and absence of significant errors or omissions in the data, all in pursuit of establishing the trustworthiness and credibility of the data.

1.2 Scope and Criteria

The scope of this verification is the independent, objective review and ex-post determination of the monitored reductions in GHG emissions from the “**250 MW Wind Power Project By Mytrah Energy**” (VCS ID 2020) in India for the period from **01-April-2022 to 30-June-2023** (Inclusive of both dates). The verification of this project was based on the registered and validated VCS Joint PD&MR/03/ and monitoring report/01/ along with supporting documents submitted by the project proponent to the VKU Assessment team. The documents thus submitted to the VKU Assessment team were reviewed against the following guidance & protocols:

- VCS Programme Guide; Version 4.4 /06/
- VCS Standard; Version 4.4/39/ and 4.5 /07/
- VCS Program Definitions; Version 4.4 /10/
- VCS Validation and Verification Manual; Version 3.2/08/
- CDM Validation and Verification Standard for Project Activities; Version 3.0/09/
- CDM Approved consolidated methodology ACM0002: Grid-connected electricity generation from renewable sources; Version 19.0/12/
- Tool 01: Tool for the demonstration and assessment of additionality; Version 07.0 (EB 70, Annex 08)/14/
- Tool 07: Tool to calculate the emission factor for an electricity system; Version 07.0 (EB 100, Annex 04)/13/
- CDM Validation and Verification Standard; Version 3.0 dated 09-September-2021/09/

The steps involved are as follows:

- To verify that the project is implemented as described in the registered VCS Joint PD&MR/03/
- To assess the project’s compliance with other relevant rules applicable under Indian legislation
- To confirm that the monitoring system is implemented and fully functional to generate voluntary carbon units (VCUs) without any double counting /28/.
- To establish that the data reported are accurate, complete, consistent, transparent and free of material error or omission by checking the monitoring records and the emissions reduction calculation/02/.
- To verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan;
- To evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement;
- To verify that reported GHG emission data is sufficiently supported by evidence.

The verification method and criteria encompassed several phases including:

- Desk review of the MR/01/, ER/02/, registered VCS Joint PD&MR/03/ and other supporting documents listed in **Table No. 04**;
- Onsite visit and interviews with PP representative and local stakeholders documented in **VKU.F46W. Attendance Sheet for Audit_VKU.VER.131.23_VCS_2020/32/**;
- Resolution of outstanding issues and issuance of final verification report and applicable VCS Verification Deed of Representation.

Verification is not meant to provide any consultancy to the project proponents. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the monitoring and reporting of the project.

1.3 Level of Assurance

All the revisions of the verification report before being submitted to the client were subjected to an independent internal technical review to confirm that all verification activities had been completed according to the pertinent VKU's procedure, with a **Reasonable level of assurance**, as per **section 04 clause 4.1.2 and 4.1.10** of the VCS Standard version 4.5/07/.

The threshold for quantitative materiality with respect to the aggregate of errors, omissions, and misrepresentations, relative to the total reported GHG emission reductions and/or removals was 1% percent, as required by clause 4.1.10 of the VCS Standard version 4.5/07/. As the project is large scale project, the materiality of the project activity based on actual emission reduction achieved is **1% of 506,370 tCO_{2e}**, which is equal to **5063.7 tCO_{2e}**. The verification report is based on the Monitoring report/01/, registered VCS Joint PD&MR /03/ and supporting documents /23//24//25//26//27//28//29//30//39//32//33//34//35//41/ made available to the assessment team and further information is also collected through performing interviews/33/ and site visit/32/.

The technical review was performed by a technical reviewer qualified in accordance with VKU's qualification procedure.

The following individuals were part of the Verification Team as presented in **Table No.- 01** below:

Role/Qualification of Assessment Team	Last Name	First Name
Team Leader, VCS Verifier & Technical Expert (T.A 1.2)	Kumar K	Sanjay
Validator/Verifier-Trainee	Tripathi	Apoorva
Project Trainee	Kumar	Anand
Local Expert (India)	Kumar K	Sanjay

The following individuals were part of the Technical Reviewer Team as presented in **Table No.-02** below:

Role/Qualification of Technical Team	Last Name	First Name
Technical Reviewer & Technical Expert (T.A 1.2)	Kumar Ahirwar	Vivek

1.4 Summary Description of the Project

The purpose of the project activity **“250 MW Wind Power Project By Mytrah Energy”** in Kadambur, Kuppanapuram, Ottarampatti, Vandanam, Kayathar, Akhilandapuram & Paneerkulam villages of **Tuticorin district** in Tamil Nadu of India is to generate electricity through wind energy sources and to supply the generated electricity to the regional/national grid system which is under the purview of the Indian Electricity Grid of India. This is a grid connected project activity which supports the development of new grid-connected renewable energy power plants in India.

This is a greenfield project activity i.e., there was no renewable energy-based electricity generation facility in site of this project activity and electricity generated by this large-scale project activity displaces an equivalent amount of electricity from the generation-mix of power plants connected to the Indian grid, which is mainly dominated by thermal/fossil fuel-based power plants. The project activity ensures the reduction of Greenhouse gas (GHG) emissions that are real, measurable, and verifiable and also plays beneficial role in the mitigation of climate change.

The project activity involves total installation 105 Wind Turbines (WTGs) has been installed which constitute the total capacity of 250 MW and the power produced displaces an equivalent amount of power from the grid, which is fed mainly by fossil fuel fired power plants. This project activity is running satisfactorily since it's commission on **30-January-2019**. During site visit assessment team has verified Plant capacity against the registered VCS Joint PD&MR/03/, Individual capacity of all WTGs was confirmed during physical verification, Previous verification reports were checked to cross verify /05/ along with Commissioning certificates/28/. Above documents have been submitted by PP in response to the feedback raised during assessment. This is in line with section **3.26 and clause 3.26.3** of the VCS Standard version 4.5/07/ where it is an obligation for the project proponent to make available to the validation/verification body the required supporting documents.

Hence VKU in adherence to the section **3.1, clause 3.1.8** of the VCS Standard version 4.5/07/ conforms that the capacity of the project has been verified from the commissioning certificates/28/ and PPA (Power purchase Agreement)/22/. This is also verified during on site visit/33/, while interviewing the site personnels, Local stakeholders and hence declare that the project capacity is in line with the defined methodology ACM0002 version 19.0/12/ & registered VCS joint PD&MR /03/

The commissioning details of the project and their location of installation are mentioned in the **table No.- 03** below:-

Name of Investor	Capacity in MW	COD	Connection with Grid	State	Usage
Mytrah Vayu (Sabarmati) Pvt. Ltd.	128.70 MW	30-January-2019	Indian Grid	Tamil Nadu	Supply to grid
	58.32 MW	16-April-2019			
	63.18 MW	11-May-2019			

The location of all WTGs and turbine lable installed at the site is provided in section 1.7 of MR/01/ which is verified by assessment team during desk review with the help of Google earth pro software/22/ and some inconsistencies were observed raised in CAR#01 and CAR#05 which were updated by PP. Locations and turbine lable name were again reconfirmed through Google earth pro software/22/, WTGs generation data /41/ and found to be correct as presented below in **Figure 01 in section 4.1** of this report. Locations and turbine lable name were further cross verified during site visit with the help of GPS map camera/21/ although some discrepancies were observed during desk review which were addressed by PP and revised MR version 05/01/ have correct location references, hence accepted by the VKU assessment team

As per MR/01/, the electricity generated from the project is supplied to the state grid system which is under the purview of the Unified Indian Grid. This is confirmed by means of registered VCS Joint PD&MR /03/, REA (JMRs) issued by Southern Regional Power Committee- (**SRPC**), and previous verification reports /05/ and interview with PP/33/. This information was verified during on site assessment and found to be in line with the details provided in the registered VCS Joint PD&MR /03/.

The net electricity of **611,052.53 MWh** was generated by the project activity and was evacuated to the grid, which is lower than the estimated value of **6,75,294.148 MWh** during the current monitoring period from **01-April-2022 to 30-June-2023** (Inclusive of both dates) This is also due to variation in climate conditions such as wind pattern and flow rate throughout the year which are beyond the control of the Project Proponent which resulted in total emission reductions of **572,433 tCO₂e** which is **-17.74 %** lower than the estimated value of **6,95,876 tCO₂e** due to lower PLF of **20.92%** achieved in current monitoring period, and some minor breakdown of **3.71 %** it has minor impact on the GHG emission reduction ,hence this lower PLF generation is acceptable.

This information has been verified through document review and interviews with representatives from PP who were present onsite during the project activity. Verification team has confirmed that all the installed technology components are fully functional and in compliance with the details provided in the registered VCS Joint PD&MR /03/. Since this project activity is considered as a large-scale project, it adheres to the approved consolidated methodology of **CDM, ACM0002:**

Grid-connected electricity generation from renewable sources; Version 19.0/12/ for quantification of greenhouse gas (GHG) emission reductions.

2 VERIFICATION PROCESS

The project activity “250 MW Wind Power Project By Mytrah Energy” is registered under VCS with reference number 2020/18/. The project is undergoing sixth verification under VCS which is conducted by VKU certification Pvt. Ltd. for the current monitoring period from **01-April-2022 to 30-June-2023** (Inclusive of both dates) under **first crediting period of 10 years**. The approach adopted to ensure the quality of emission reductions is described in the following sections.

2.1 Method and Criteria

Verification was conducted using VKU’s procedures in line with the requirements specified in the VCS Requirements, i. e. VCS Program Guide version 4.4/06/, VCS Standard version 4.4/39/ and 4.5/07/. The GHG emission reductions are calculated on the basis of the approved Baseline and monitoring methodology, **ACM0002: Grid-connected electricity generation from renewable sources; Version 19.0/12/**.

Scope: 01, Energy Industries (Renewable- and non-renewable sources)

Title: Grid Connected Renewable Electricity Generation; Version 19.0/12/

The project activity is a large-scale project activity and does not fall under the category of “grouped projects”. Hence no acceptance sampling methods was employed by the assessment team and during the Onsite site visit at all the plant sites /38/ verification team reviewed 100% data for all the WTGs involved in this project at site for the verification of GHG emission reductions or removals generated by the project

However, in order to conduct onsite visit in a such a way that the efforts and time is optimised to choose a representative, the verification team adopted simple random sampling as the sampling plan. This is in line with para 7 section 5.1 of the Guideline: Sampling and surveys for CDM project activities and programmes of activities (EB67Annex 06)/ which states that

This is in line with para 7 section 5.1 of the Guideline: Sampling and surveys for CDM project activities and programmes of activities (EB67Annex 06⁶) / which states that

⁶ https://cdm.unfccc.int/sunsetcms/storage/contents/stored-file/20151023152925068/Meth_GC48_%28ver04.0%29.pdf

5.1. Simple random sampling

7. A *simple random sample* is a subset of a population (e.g. villages, individuals, buildings, pieces of equipment) chosen randomly, such that each element (or unit) of the population has the same probability of being selected. The sample-based estimate (mean or proportion) is an unbiased estimate of the population parameter.

Since this project has pieces of equipment (WTG, Substation of the wind farm) dispersed in one district in Tamil Nadu. the verification team found the applicability of the above para suitable to the present project activity.

The WTGs are homogenous as all of them are using same technology, the probability of choosing the WTGs is same if picked at random, hence are unbiased estimate.

Renewable energy projects like wind and solar power plants have low uncertainties compared with cookstove projects. This is due to the fact that the RE projects use high technology with precision monitoring and managed by technicians and engineers, unlike ICS projects.

Hence verification team based on the expertise and sectoral scope knowledge decided to apply confidence precision level of 90/10. This professional judgement applied by the verification team is also in line with para 4 (b), (c) of the CDM guidelines on sampling.

Accordingly, the verification team then applied the equation (1) as per para 12 of the guidelines as follows:

The equation to give us the required sample size is:

$$n \geq \frac{1.645^2 N \times p(1-p)}{(N-1) \times 0.1^2 \times p^2 + 1.645^2 p(1-p)} \quad \text{Equation (1)}$$

Were

n = sample size

N = Total number of WTGs in the bundle

p = our expected proportion

1.645 = Z score value for 90/10.

0.1 = Represents the 10% relative precision (0.1x 0.5 = 0.05 ie., 5% on either side of the p of the normal distribution curve)

Here the unknown parameter is p. In the absence of a specific guidance on choosing the value of p for renewable energy projects viz., wind projects, the verification team based on the expertise within the organisation and sectoral scope expertise as well as sampling knowledge, devised the following rules to choose the value of p,

It must be noted that the rules are based on the following priors/operational inputs of the WTGs at site in general.

- For operational efficiency of WTGs, PP usually expects near 100% of the times WTGs to work.
- However, due to grid availability situations at site and scheduled and unscheduled breakdowns, PP would expect at least 90% of the times WTGs in the project activity to be operational for commercial viability.
- So certain WTGs which operate less than this expectation are usually outliers or exceptions

Based on these three inputs or priors of the operational efficiency of WTGs, the verification team then applied the following algorithm to determine the value p

- Obtain the breakdown hours of all the WTGs in the project activity bundle for at least one year if not for the entire monitoring period in question.
- Then find out the net operational hours as:

$$\frac{(\text{Total operational hours in the duration}/\text{MP} - \text{breakdown hours in the duration}) \times 100}{\text{Total operational hours in the duration}}$$
- From the above, select those WTGs whose percentage operational hours is > 90%. For example, If there are 100 WTGs in a bundle, and 5 WTGs have operational hours % of less than 90%, then remove the same from the list.
- It follows then that the number of WTGs to be considered for the given monitoring period: $100 - 5 = 95$.
- From the selected WTGs determine the average breakdown percentage $(1-p)\%$ for the selected period and say is 3.5%
- Now the value of p then becomes: $100\% - 3.5\% = 96.5\%$ or 0.9650 if expressed as proportion. Applying this value in the above equation, determine n, where $N=95$, $p=0.9650$ for 90/10. For our example it reduces to 9 for 90/10. If higher confidence/precision ie., 95/5 is applied then n reduces to 36 nos.

For Maniyarchi site, Tuticorin district in Tamil Nadu

The breakdown details are given as below:

SI No	WTG No	Total Down Time in Hours	% age of Non Working in MP
1	MAN_379	9819.90	89.73%
2	MAN_437	6632.77	60.61%
3	MAN_161	5704.88	52.13%

4	MAN_125	2499.73	22.84%
5	MAN_019	1996.97	18.25%
6	MAN_305	1938.78	17.72%
7	MAN_370	1900.63	17.37%
8	MAN_323	1866.83	17.06%
9	MAN_185	1688.25	15.43%
10	MAN_184	1603.72	14.65%
11	MAN_012	1266.03	11.57%
12	MAN_079	784.23	7.17%
13	MAN_356	775.13	7.08%
14	MAN_127	617.45	5.64%
15	MAN_321	585.80	5.35%
16	MAN_196	583.97	5.34%
17	MAN_264	546.25	4.99%
18	MAN_055	502.45	4.59%
19	MAN_005	469.42	4.29%
20	MAN_022	445.58	4.07%
21	MAN_353	436.62	3.99%
22	MAN_494	435.42	3.98%
23	MAN_222	410.65	3.75%
24	MAN-_013	403.78	3.69%
25	MAN_341	395.65	3.62%
26	MAN_146	390.63	3.57%
27	MAN_492	377.08	3.45%
28	MAN_018	357.08	3.26%
29	MAN_003	304.63	2.78%
30	MAN_082	304.52	2.78%
31	MAN_380	301.32	2.75%
32	MAN_312	292.52	2.67%
33	MAN_215	292.47	2.67%

34	MAN_405	292.17	2.67%
35	MAN_026	286.15	2.61%
36	MAN_322	276.80	2.53%
37	MAN_485	267.78	2.45%
38	MAN_255	260.88	2.38%
39	MAN_020	260.05	2.38%
40	MAN_258	258.40	2.36%
41	MAN_115	256.22	2.34%
42	MAN_015	247.82	2.26%
43	MAN_416	244.87	2.24%
44	MAN_499	241.18	2.20%
45	MAN_444	229.87	2.10%
46	MAN_311	226.98	2.07%
47	MAN_490	224.85	2.05%
48	MAN_004	220.02	2.01%
49	MAN_253	205.95	1.88%
50	MAN_159	194.88	1.78%
51	MAN_024	182.12	1.66%
52	MAN_350	177.27	1.62%
53	MAN_498	176.77	1.62%
54	MAN_002	172.28	1.57%
55	MAN_314	165.10	1.51%
56	MAN_361	155.43	1.42%
57	MAN_297	146.95	1.34%
58	MAN_340	140.53	1.28%
59	MAN_480	139.74	1.28%
60	MAN_388	130.08	1.19%
61	MAN_324	128.85	1.18%
62	MAN_011	115.50	1.06%
63	MAN_010	110.90	1.01%

64	MAN_201	109.90	1.00%
65	MAN_197	109.68	1.00%
66	MAN_320	107.32	0.98%
67	MAN_299	106.12	0.97%
68	MAN_301	105.20	0.96%
69	MAN_412	101.32	0.93%
70	MAN_488	101.27	0.93%
71	MAN_126	99.92	0.91%
72	MAN_304	98.08	0.90%
73	MAN- _160	93.77	0.86%
74	MAN_199	93.37	0.85%
75	MAN_349	93.20	0.85%
76	MAN_158	92.63	0.85%
77	MAN_366	84.52	0.77%
78	MAN_483	83.83	0.77%
79	MAN_497	83.43	0.76%
80	MAN_319	81.65	0.75%
81	MAN_377	79.77	0.73%
82	MAN_017	79.70	0.73%
83	MAN_495	78.23	0.71%
84	MAN_016	78.12	0.71%
85	MAN_486	75.80	0.69%
86	MAN_481	73.48	0.67%
87	MAN_362	73.13	0.67%
88	MAN_398	72.12	0.66%
89	MAN_280	72.05	0.66%
90	MAN_417	71.25	0.65%
91	MAN_136	65.72	0.60%
92	MAN_162	65.15	0.60%
93	MAN_326	61.35	0.56%

94	MAN_443	60.13	0.55%
95	MAN_328	57.42	0.52%
96	MAN_194	54.40	0.50%
97	MAN_378	52.92	0.48%
98	MAN_496	52.45	0.48%
99	MAN_189	49.95	0.46%
100	MAN_504	48.65	0.44%
101	MAN_351	47.57	0.43%
102	MAN_345	47.30	0.43%
103	MAN_415	44.43	0.41%
104	MAN_505	38.83	0.35%
105	MAN_493	6.37	0.06%
Average breakdown hours of 94 WTGs whose breakdown hours is less than 10%			1.18%

As it can be seen that 05 out of 105 WTGs in the project activity were having breakdown hours over 10% and the average breakdown hours is 1.88% for the monitoring period, for the remaining 94 WTGs (105-11).

So, the proportion of WTGs which are operating ie., $p = 1 - 0.0188 = 0.9812$ for the project activity. Hence recalling the equation (1) from the guidelines above, and putting the values from the above discussion, the number of samples n then reduces to 5 nos. Using random number generator function in excel, the VVB chose the highlighted WTGs in the table above for onsite visit on 23/09/2023.

SI No	WTG No	Coordinates as per MR, Latitude	Coordinates as per MR, Longitude	Coordinates measured at site using GPS camera Latitude	Coordinates measured at site using GPS camera Longitude	Distance in meters
13	MAN_356	8.7724	77.8559	9.0128	77.9567	260.7082
43	MAN_416	8.9752	77.8537	8.9919	77.8058	50.7093
69	MAN_412	9.0424	77.8576	9.1535	77.9687	157.1333
80	MAN_319	9.0332	77.8763	9.0072	77.9050	38.6700
93	MAN_326	9.0885	77.9462	9.2007	78.0574	157.9201

The AT cross checked the coordinates at site of the sampled WTGs using GPS map camera/20 /and noted down the coordinates. Then checked the distance between the coordinates checked at site with that of the coordinates in MR. Since there are no specific guidelines to check the minimum distance between the measured GPS coordinates at site with that in MR, the assessment team based on the sectoral expertise mutually agreed that if the distance between the observed and stated coordinates is equal to or less than 300 m, then the difference is negligible. Hence the coordinates at site were also found to acceptable upon physical check on the sampled WTGs

The objectives of the site visit and outcomes of the site visit is mentioned in the ensuing sections.

The verification consisted of the following phases:

- **Planning and Intimation to VERRA about site visit:** The assessment team plans the GHG-programme site visit and starts with a desk review of MR/1/ and ER calculation spreadsheet/2/. Assessment team also shared a NOVS Form 15 business days before the initial meeting with the project proponent.
- **Strategic Analysis:** The assessment team conducted a strategic analysis to gain insights into the organization's, project's, or product's activities. This analysis was aimed at determining the scope and scale of the verification activities and will be utilized in the risk assessment process.
- **Risk Assessment;** The assessment team carried out a risk assessment of the GHG statement to identify the likelihood of a substantial error or noncompliance with the established criteria.
- **Evidence Gathering Activities;** Using a risk-based approach assessment team prepared the evidence gathering activities to collect sufficient and appropriate evidence upon which to base the conclusion & determine whether the GHG statement conforms to the criteria, taking into account the principles of the standards that apply to the GHG statement.
- The requirement for a site visit is recognized, and subsequently, the planning for the site visit is undertaken. Decision to take site visit was based on independent risk assessment, as defined in section 4.1.13 of VCS standard version 4.5/07/
- **Audit and Sampling Plan:** An audit plan is prepared, including all sub-elements required for an integrated verification process aligned with the contract, scope, objectives, level of assurance, and materiality.
- **Evidence Gathering Plan:** The evidence-gathering plan is formulated in accordance with the risk assessment conducted by VKU Assessment Team. This plan is structured to reduce the verification risk to a level considered acceptable. As a result, the evidence-gathering plan outlines the specific nature and scope of the evidence collection activities.
- **Client Confirmation and Approval:** The site visit audit plan is sent to the client for confirmation /approval via email

- **Document Review:** Relevant documents, such as the verification report, monitoring plan, methodology, VCS Joint PD&MR/03/, and QA/QC procedures, are thoroughly reviewed.
- **On-Site Assessment:** This includes interviews and evaluation of the actual project scenario and this is line with the VCS standard version 4.5 /07/
- **Resolution of Discrepancies:** Any non-conformities identified during the assessment are addressed and resolved and documented in Appendix-B of this report.
- **Independent Review:** A technical reviewer provides an independent assessment of the project.
- **Final Verification:** After completeness checks, the verification report and certification are issued.

The following sections outline each step involved in verification in more detail.

2.2 Document Review

During the document review, VKU has applied standard auditing techniques to assess the quality of information provided. The verification was performed primarily based on the review of Monitoring report (MR); Version 1.0 dated 29-July-2023/01/, and final MR; **Version 5.0 dated 08-March-2024/01/**.

The Emission reduction (ER) calculations spreadsheet; Version 1.0 dated 29-July-2023/02/ and ER final ER; **Version 5.0 dated 08-March-2024/02/** were received from PP and assessed along with the monitoring reports as part of the verification. In addition, the registered VCS Joint PD&MR/03/ was also reviewed in particular for the baseline estimations and the monitoring plan.

As per section **3.26** and clause **3.26.3** of the VCS Standard version 4.5/07/ it is an obligation for the project proponent to make available to the assessment team the required supporting documents and data needed to support statements and data as documented in the monitoring report/01/. Thus, the assessment team reviewed the following documents during verification:

The following **Table-04** lists the documentation that were reviewed during the verification:

/1/	Infinite Environmental Solutions LLP: VCS monitoring report for “250 MW Wind Power Project By Mytrah Energy”, Version 01 dated 29-July-2022 Version 02 dated 28-September-2022 Version 03 dated 08-November-2023 Version 04 dated 30-Novemner-2023 Version 05 dated 08-March-2024
/2/	Infinite Environmental Solutions LLP: Emission Reduction Calculation Spreadsheet, for “250 MW Wind Power Project By Mytrah Energy”, Version 01 dated 29-July-2022 Version 02 dated 28-September-2022 Version 03 dated 08-November-2023 Version 04 dated 30-November-2023

	Version 05 dated 08-March-2024
/3/	EKI Energy Services Limited: Registered VCS Joint PD&MR for the project “250 MW Wind Power Project By Mytrah Energy”; Version 02 dated 20-December-2019
/4/	Earthood Services Private Limited: Registered VCS Joint Validation and Verification report for the project “250 MW Wind Power Project By Mytrah Energy”; Version 01 dated 24-December-2019
/5/	LGAI Technological Center, S.A. (Applus+ Certification): Registered previous VCS Verification report for the project 250 MW Wind Power Project By Mytrah Energy” Version 02 dated 30-July-2022
/6/	<u>VCS: VCS Program Guide; Version 4.4 dated 29-August-2023</u>
/7/	<u>VCS: VCS Standard; Version 4.5 dated 04-October-2023</u>
/8/	<u>VCS Validation and verification manual; Version 3.2 dated 19-October-2016</u>
/9/	<u>CDM Validation and Verification Standard; Version 3.0 dated 09-September-2021</u>
/10/	<u>VCS Program Definitions; Version 4.4 dated 29-August-2023</u>
/11/	VCS: Monitoring report Template; Version 4.2
/12/	<u>CDM Executive Board: Baseline and Monitoring Methodology Baseline and monitoring methodology ACM0002”, “Grid-connected electricity generation from renewable sources” (version 19.0)</u>
/13/	Tool 07: <u>Tool to calculate the emission factor for an electricity system⁷ - Version 07.0 (EB 100, Annex 04)</u>
/14/	Tool 01: <u>Tool for the demonstration and assessment of additionality - Version 07.0.0 (EB 70, Annex 08)</u>
/15/	<u>https://cea.nic.in/wp-content/uploads/baseline/2020/07/user_guide_ver14.pdf</u>
/16/	UNFCCC: Project search: <u>https://cdm.unfccc.int/Projects/projsearch.html</u>
/17/	Gold Standard Foundation: <u>https://registry.goldstandard.org/projects?q=&page=1</u>
/18/	VERRA: <u>https://registry.terra.org/app/projectDetail/VCS/2020</u>
/19/	<u>(Renewable Energy Certificate Registry of INDIA - Registered RE Generator List (recregistryindia.nic.in))</u>
/20/	<u>GPS map camera (GPS App)</u>
/21/	<u>GPS Google earth software used for Location</u>
/22/	Power purchase/Sale Agreement between:

⁷ <http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf>

	1. Power Sale Agreement for sale of 50 MW Wind Power (From M/S Mytrah Energy India Pvt. Ltd.) between PTC India Limited and North Bihar Power Distribution Company Limited and South Bihar Power Distribution Company Limited; dated 27-June-2017 2. Power Sale Agreement for sale of 50 MW Wind Power (From M/S Mytrah Energy India Pvt. Ltd.) between PTC India Limited and Jharkhand Bijli Vitran Nigam Limited; dated 23-June-2017 3. Power Sale Agreement for sale of 100 MW Wind Power (From M/S Mytrah Energy India Pvt. Ltd.) between PTC India Limited and Uttar Pradesh Power Corporation Limited; 13-July-2023 4. Power Sale Agreement for sale of 50 MW Wind Power (From M/S Mytrah Energy India Pvt. Ltd.) between PTC India Limited and M/s Assam Power Distribution Company Limited, 04- May -2017
/23/	Yadav Measurements Private Limited: Certificates of Calibration for all the meters belongs to project activity
/24/	Invoice issued by PP Mytrah Vayu (Sabarmati) Pvt. Ltd. for the current monitoring period 01-April-2022 to 30-June-2023 (Inclusive of both dates)
/25/	REA certificate (JMRs) issued by Southern Regional Power Committee- (SRPC). for the current monitoring period 01-April-2022 to 30-June-2023 (Inclusive of both dates)
/26/	Operation and Maintenance done by GE India Industrial Private Limited
/27/	Letter of declaration from 250 MW Wind Power Project By Mytrah Energy dated 21-August-2023 regarding not having created or sought any other form of environmental credit for the current verification period from 01-April-2022 to 30-June-2023 (Inclusive of both dates)
/28/	Commissioning Certificates
/29/	Technical specification of the all WTGs
/30/	Grievance Register photograph
/31/	Training Records
/32/	Site visit dated 23-September-2023 photographs and attendance sheet VKU.F46W. Attendance Sheet for Audit_ VKU.VER.131.23_VCS _2020
/33/	Onsite Personnel Interviews and Focussed Group Discussions dated 23-September-2023
/34/	Breakdown Details (Please Refer Appendix 2 of MR and section 04 Verification Process of this Verification Report) PP has submitted Breakdown Details
/35/	VKU.F64W.Field Assessment Checklist for Onsite Visit_ VKU.VER.131.23_VCS _2020
/36/	<u>ISO 14064-3:2019: Greenhouse gases — Part 3: Specification with guidance for the verification and validation of greenhouse gas statements</u>
/37/	<u>ISO 14065:2020: General principles and requirements for bodies validating and verifying environmental information</u>
/38/	<u>ISO/IEC 17029:2019: Conformity assessment — General principles and requirements for validation and verification bodies</u>
/39/	<u>VCS Standard; Version 4.4; dated 17-January- 2023</u>

/40/	<u>CDM EB67 annex 06 Guideline: Sampling and Surveys for CDM project activities and programme of activities. https://cdm.unfccc.int/sunsetcms/storage/contents/stored-file/20151023152925068/Meth_GC48_%28ver04.0%29.pdf</u>
/41/	<u>WTGs Generation Data</u>

2.3 Interviews

An on-site inspection has been performed by the assessment team. Representatives of the PP and O&M team were interviewed personally by assessment team on **23-September-2023** at multiple Villages **Kadambur, Kuppanapuram, Ottarampatti, Vandanam, Kayathar, Akhilandapuram & Paneerkulam of Tuticorin district in Tamil Nadu state**, India. Personnel responsible for monitoring of project activity, data collection, management, and QA/QC procedure were also interviewed. These tables outline the personnel involved in the interviews, along with their respective roles. The interviews specifically targeted individuals responsible for monitoring -of project activity, data collection, quality assurance and quality control (QA/QC) procedures. The tables serve to identify the individuals interviewed and provide relevant information regarding their roles within the project.

The details of the people interviewed are mentioned in the Table-05 below:

Location: District- Tuticorin, **State-** Tamil Nadu, India

S. No.	Name	Organization and Designation	Topic
1.	D. Arulselvam (Male)	JSW Deputy Manager	- Data archiving, breakdown details - Maintenance of generation records and Calibration of meters - Project Implementation and technical details of the Project like breakdown details - Training requirement of the personnels - O&M of the plant site and personnel responsible for monitoring of required monitored parameters and implementation of QA/QC Procedure.
2.	S. Kanni raj (Male)	Aerodynamic Junior Engineer	
3.	S. Kalidass (Male)	Aerodynamic Tech	
4.	J. Manimaran (Male)	Aerodynamic Tech	
5.	Muppidathi G (Male)	GE Renewables	
6.	Sharmila M (Female)	GE Renewables	
7.	Shobia A (Female)	GE Renewables	

The topics covered during interview ranges from general features and implementation of project to technical details of the project like calibration, monitoring and measuring system, data collection, recording, emergency procedures internal audit, Procedures for handling non-conformances with the validated monitoring plan, personal training and archiving procedures. The assessment was based on the feedback received during onsite interview coupled with the documentation in **VKU.F64W.Field Assessment Checklist/35/**

During Onsite Visit/32/, Assessment team also interviewed the local stakeholders involved in the projects to verify the implementation and process of grievance resolution as claimed and mentioned in the Monitoring report/01/ (refer section 2.2 of MR) by the PP. The assessment team confirmed the sustainable development claims and assessed the socio-economic impact of the project on the local community and details about the same is provided in section 4.1 of the report. Assessment Team also checked the records and observed that the PP provided opportunities for the locals to express their opinions and grievances in the grievance register/30/ placed at the site, with efforts to resolve any issues through consultation with stakeholders. Assessment team thus verified the grievance register at the site and discussed about this with the stakeholders via focussed group discussions and personal interview/33/ and it was accepted as PP has a well-defined procedure to solve any grievance when raised by any local stakeholders in the project implementation and that their grievances are resolved appropriately which was confirmed during site visit, although no negative feedback was received during current monitoring period.

The Details of the Personnel Interview with Stakeholders are mentioned in the Table-06 below:

The above stated information regarding the Interview with site personnel/33/ was recorded by

S. No.	Name	Designation	Category	Topic of Discussion
1.	K. Ganesamoorthy Pandian (Male)	Security Officer, Active Security	Local Stakeholder	- Execution of Project activity and its impact on the economic, social and environmental parameters on the local people of the area & around the situated project activity - The ongoing communication procedure and the addressal of their grievance by the project proponent - The employment generation due to project activity implementation.
2.	S. Selventhiran (Male)	Non-Technical Assist		
3.	P. Raja (Male)	Non-Technical Assist		
4.	B. Durai (Male)	Non-Technical Assist		

VKU's Assessment Team in a form called as **VKU.F46W. Attendance sheet for Audit/32/** & there were no negative comments received during the stakeholder consultation interview conducted on site and more detail is enlisted in the section 4.2.2 below of this report.

2.4 Site Visits

Site Location visited:

Location: Multiple Villages Kadambur, Kuppanapuram, Ottarampatti, Vandanam, Kayathar, Akhilandapuram & Paneerkulam of Tuticorin district in Tamil Nadu state of India. Further the location along with longitude and latitude is mentioned in section 4.1. of this report.

An On-site visit was undertaken by the verification team to the project location identified in the MR/01/ at multiple Villages Kadambur, Kuppanapuram, Ottarampatti, Vandanam, Kayathar, Akhilandapuram & Paneerkulam of Tuticorin district in Tamil Nadu state of India, on **23-September-2023** to carry out the following;

- A review of the operation and implementation of the registered project activity in accordance with VCS Joint PD&MR; Version 02 dated **20-December-2019/03/**and VCS MR/01/.
- An analysis of information & data flows, used in generating, aggregating and reporting of monitoring parameters.

- Interviews/33/ with relevant personnel to determine whether the operational and data collection procedures are implemented in accordance with the monitoring plan in the registered VCS Joint PD&MR /03/
- A cross check between information provided in the monitoring report and data from other sources such as plant logbooks, regional energy Account and invoices generated by the PP.
- A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the VCS Joint PD&MR /03/ the applied methodology/12/ including applicable tool/13/;
- A review of calculations and assumptions made in determining the GHG data and emission reductions;
- An identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.

2.5 Resolution of Findings

The objective of this phase of the verification is to resolve any outstanding issues which need to be clarified for VKU's positive conclusion on the project description. To guarantee transparency a verification protocol has been customized for the project. The protocol shows in a transparent manner the requirements, means of verification and the results from verifying the identified criteria. The verification protocol consists of three situations in tables; the different columns in these tables are described below.

A corrective action request (CAR) is raised if one of the following occurs:

- Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient;
- Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impair the estimate of emission reductions;
- Issues identified in a FAR during previous assessment i.e., in validation or verification report to be cross verified during verification have not been resolved by the project participants.

A clarification request (**CL**) is raised if information is insufficient or not clear enough to determine whether the applicable VCS requirements have been met.

A forward action request (**FAR**) is also raised in cases where any required deviation/information is not fulfilled in current verification and thus needs to be taken up in consequent verification for better transparency thus holding the applicability of the methodology eligible to the project activity and there is no impact of the same on additionality, baseline scenario & emission reduction calculation of project.

In summary, **04 CLs, 05 CARs** and **00 FAR** were raised during this verification which were closed successfully and details are provided under **Appendix B** of this report.

2.5.1 Forward Action Requests

Based on the review of the registered VCS Joint Validation & Verification report /04/ and previous VCS Verification Reports/05/, no FAR is found which needs to be closed during this verification. No FAR is raised during the current verification.

2.6 Eligibility for Validation Activities

VKU has not undertaken any validation activities as part of the verification and does not hold accreditation for validation of any relevant sectoral scope Hence this section is not applicable. It is to further conclude that during current verification there is no validation assessment undertaken either by VKU itself or parallelly by other certification bodies, as the same was confirmed with focussed group discussions and interview with the PP /33/ during site visit/32/.

Assessment team assessed the VERRA's website on 28-March-2024: <https://verra.org/validation-verification/vku-certification-pvt-ltd/#vcs> wherein the scope of services of VKU certification Pvt. Ltd. is mentioned as verification and not validation. Thus, ensuring that the accreditation details mentioned in FVR is consistent and correct.

VKU Certification Pvt. Ltd is currently undergoing validation accreditation with ANAB for which witness audit has already been conducted. Thus, ensuring that the accreditation details mentioned in FVR is consistent and correct.

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

The project has not been registered under any GHG program. Furthermore, double counting issue has also been assessed and the project verification team has also checked the I-REC Registry and this project isn't available within I-REC Registry database at the time of this report date. Similarly, Gold Standard project database, VCS project database, Bio Carbon registry, ICR registry, Social Carbon registry, UCR registry and CerCarbono registry were checked and this project isn't available within Gold Standard and VCS projects' databases either at the time of this report date.

That means, the only other eligible GHG programs in the host country is Gold Standard, VCS, Biocarbon, ICR, Social Carbon, UCR and Cercarbono and the certification program is Renewable Energy Certification (REC), and the project hasn't been listed in any of them, hence it could be confirmed that the project has not participated or been rejected under any other GHG programs. This was supported from the declaration/28/ submitted by PP in which they have mentioned that they will not claim same GHG emission reductions of the project from any other GHG program except VCS thus ensuring emission reduction generated from the project activity for current monitoring period from **01-April-2022 to 30-June-2023 (Inclusive of both dates)** will not be double counted hence accepted by the assessment. Assessment team also did the exercise of independently searching for such project registration or claim for current monitoring period was performed for other GHG related benefits such as REC/19/ and I-REC benefits and based on both independent assessment and declaration submitted by PP/28/, the assessment team accepted the claim that there is no double counting from this project activity for current monitoring period from **01-April-2022 to 30-June-2023 (Inclusive of both dates)**. Thus, ensuring emission reduction generated from the project activity will not be double counted hence accepted by the assessment team

1. <https://www.recregistryindia.nic.in/>

2. <http://cdm.unfccc.int/>

3. <http://www.goldstandard.org/>
4. <https://www.ucarbonregistry.io/>
5. <https://projects.globalcarboncouncil.com/>
6. [I-REC Standard - The International REC Standard Foundation \(irecstandard.org\)](http://www.irecstandard.org/)
7. [Carbon Registry-India](http://www.carbonregistryindia.com/)
8. [International Carbon Registry - International Carbon Registry](http://www.internationalcarbonregistry.org/)
9. [VCU Issuance Records](#)
10. [Cercarbono – Certified Carbon Standard](#)

Rejection by other GHG programs

The Project is not rejected by other GHG programs. A declaration/28/ for the same is checked and found correct by the assessment team. Also, assessment team independently verified with the following registries and checked projects from the PP matching the same project design and found that no such project either exists or were rejected by the registries.

The details of the registries checked are as follows:

1. <https://www.recregistryindia.nic.in/>
2. <http://cdm.unfccc.int/>
3. <http://www.goldstandard.org/>
4. <https://www.ucarbonregistry.io/>
5. <https://projects.globalcarboncouncil.com/>
6. [I-REC Standard - The International REC Standard Foundation \(irecstandard.org\)](http://www.irecstandard.org/)
7. [Carbon Registry-India](http://www.carbonregistryindia.com/)
8. [International Carbon Registry - International Carbon Registry](http://www.internationalcarbonregistry.org/)
9. [Cercarbono – Certified Carbon Standard](#)

In conclusion, the project's exclusive registration under VCS for the current monitoring period, along with its absence from rejection lists of other GHG programs, has been comprehensively verified, ensuring the integrity and credibility of its GHG benefits claims.

3.2 Methodology Deviations

There is no methodology description deviation identified during the current monitoring period. No deviation was involved in previous joint validation/verification /04/and previous verification as well/05/. The assessment team confirms the same by checking the project webpage/18/.

3.3 Project Description Deviations

The following two deviations was reported during the previous monitoring periods and two deviations was reported during current monitoring period these are considered in the current verification. Description of the deviation and the assessment on conservativeness of the deviations is provided below.

Deviation 1:

This deviation is a permanent monitoring deviation. The meter reading practice in India is upgrading to optimum level which based on robust technology and requires minimum human intervention. Currently in this monitoring period, the deviation is for Tamil Nadu state project having Project Investor name Mytrah Vayu (Sabarmati) Pvt. Ltd. but not limited to further upgradation at another states of India.

The monitoring practice is updated (October 2018) and it's shifted to Deviation Settlement Mechanism (DSM) in order to more strengthen the national grid. The export and import values are omitted and no longer provided, only net export values are being provided for the invoicing to respective boards/government institutions. In DSM, PP have to forecast electrical energy generation in day time blocks (In India, 15 minutes each block, total 96 blocks) well in advance.

The invoicing is done on the forecasted value. The actual generation deviation from the forecasted values is penalized, it depends upon the deviation magnitude. Therefore instead of export and import values, the net values is directly obtained (either by including deviation to the schedule values or directly considering the actual values from the SRPC report) for the emission reduction calculation. The approach doesn't effect the VCU calculation

For Sothern Region, Total Energy schedule and the Actual values (which is the actual Net delivered) is maintained by the Southern Regional Power Committee (SRPC) Secretariat, Central Electricity Authority, Government of India. Regional Energy Account (monthly net export) for every month in respect of Southern Region has been uploaded on the SRPC website, www.srpc.kar.nic.in. Since the document is provided by government nodal agency, therefore no any cross-checking is required.

The nature of deviation is permanent.

The above deviation is approved in 2nd periodic verification. There is no deviation required for the current and present verification.

Deviation 2:

PP has requested for deviation regarding the change in feeder from the registered VCS Joint PD&MR. During the time of validation PP was using two feeders i.e Bay-222 and Bay-223. Bay-223 is now being transferred to M/s orange power. The feeder details are provided below:

Feeder number	Meter serial numbers
Bay-222	SA0016A, SA0014A, SA0013A
Bay-223	SA0015A, SA0011A, SA0012A

The above change does not have any impact on emission reductions, applicability of the methodology, additionality or the appropriateness of baseline scenario. And, therefore deviation is sought for the same from the registered PD.

This deviation was approved in 3rd Verification.

Deviation -3

PP has requested the deviation to update geo coordinates and WTGs label name for stated in section 3.2.2 of MR/1/ of wind project activity as it has a typo error and now, they are corrected as per actual scenario at site, thus the geo co-ordinates and WTGs label name do not match with the registered Joint PD&MR. This change has been assessed by assessment team through Google earth pro/21/ software and the co-ordinates were found to be correct for the WTGs, hence accepted and this change do not impact on the applicability of the methodology, additionality, or the appropriateness of the baseline scenario.

The correct geo-coordinates along with WTG label are as follows-

		Old Geo coordinates		Correct geo coordinates	
S. No	WTG label	Latitude	Longitude	Latitude	Longitude
1)	MAN 321	N 8.9734	E77.92288	N8.9734	E77.9062
2)	MAN 492	N9.0387	E77.88599	N8.939364	E77.844914
3)	MAN 493	N9.0147	E77.84943	N9.019844	E77.851033

The geo coordinates and WTG labels of below mentioned WTG were mentioned incorrect in registered PD due to typographic error.

Old WTG label and Geo coordinates as per registered VCS Joint PD&MR				Correct WTG labels and geo coordinates		
S. No	WTG Label	Latitude	Longitude	Correct WTG label	Latitude	Longitude
1)	MAN 204	N8.8243	E77.90424	Man 024	N8.8243	E77.9042
2)	MAN 355	N9.0387	E77.88599	MAN 495	N9.0387	E77.8860
3)	MAN 491	N9.0147	E77.84943	MAN 496	N9.0418	E77.8976

4)	MAN 500	N8.909861	E77.82761	MAN-505	N8.9978	E77.848941
5)	MAN 501	N8.902567	E77.8362	MAN 504	N9.003203	E77.842199

The verification team has acknowledged and accepted the deviation, affirming that the project remains fully compliant with the VCS rules. Furthermore, it is important to note that this deviation has no impact on the applicability of the methodology, the concept of additionality, or the appropriateness of the baseline scenario. The project continues to meet all relevant requirements and remains in adherence with VCS guidelines

This deviation is requested in current monitoring period.

Deviation -4

In section 1.1 the capacity in MW were mentioned incorrect due to typographical error. The correct details are as follows-

Name of Investor	Capacity in MW	COD	Connection with Grid	State	Usage
Mytrah Vayu (Sabarmati) Pvt. Ltd.	128.70 MW	30-January-2019	Indian Grid	Tamil Nadu	Supply to grid
	58.32 MW	16-April-2019			
	63.18 MW	11-May-2019			

During review of the MR /01/ and other supporting docs like JMRs (REA) /26/, Commissioning certificates /28/. VVB is able to assess that deviation is described and justified appropriately and further the project is in compliance with the VCS rules as per para 3 of section 3.2.9 of VCS Validation and Verification Manual /08/. Hence the deviation is acceptable to the VVB.

As per the assessment team, the deviation taken is in line with the guidelines provided in VCS Standard Version 4.4/07/ Section 3.20; it doesn't impact existing applicability conditions, methodology, baseline, and additionality.

This deviation is requested in current monitoring period.

3.4 Grouped Project

The project does not involve any addition of new project activity and thus the project do not fall under grouped project.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

During the onsite audit with the project proponent (PP) representative, it was concluded that the project is implemented as per the requirement of the registered VCS Joint PD&MR version 02 dated 20-December-2019 /03/and approved monitoring plan.

The breakdown and operational hours site wise are mentioned in the **Table -07**; below:

S.No.	Plant Site	Total Hours	Net operational Hours	Breakdown Hours
1	Mytrah Vayu (Sabarmati) Pvt.Ltd.	11,491.20 hours	11,064.72 hours/96.29% of total hours	42,648 hours/3.71% of total hours

The WTGs are under operational for 96.26% of the total hours during the current monitoring period. The breakdown occurred for a total 3.71 % for this project activity because of schedule maintenance and regular shutdowns however plant was not entirely shutdown during these breakdown hours, only the affected part was temporarily taken out of Operation. Therefore due to the minor percentage variation of the breakdowns identified in the current monitoring period, However it has minor impact on the GHG emission reduction these were assessed by assessment during site visit with the help of interviews of site personnel and checking the records at the site and desk review of the MR/01/ and breakdown sheet/34/ submitted by PP. The summary of breakdown details in the current monitoring period has been described in the detailed analysis of the same has been provided in **APPENDIX 2 of MR..**

The project underwent continuous operation and only scheduled maintenance as per the manufacture's specification happened which is acceptable to the assessment team as verified during the interview with PP personnel/36/ Senior engineers/Junior engineer/Assistant manager present at site during onsite visit. Moreover, there is no unforeseen incident which can affect the applicability of the methodology and thus the same is acceptable to the assessment team.

The breakdowns were attributed to various major reasons, which may include:

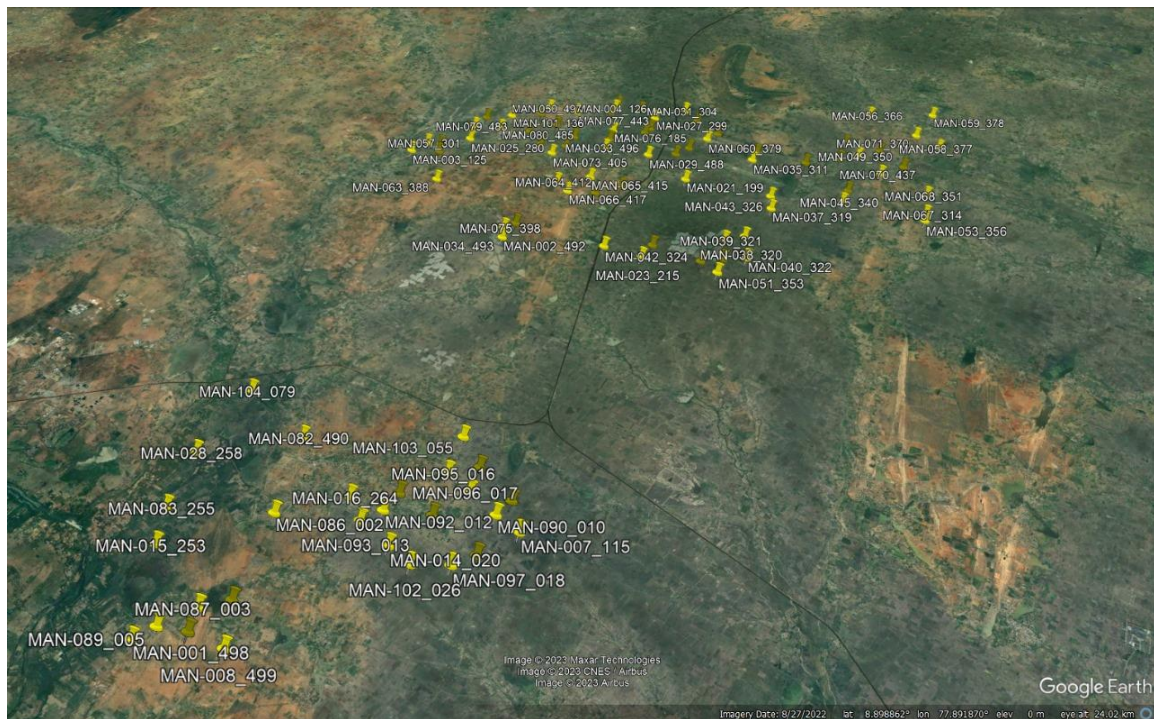
- Grid failure
- Scheduled maintenance
- Manual stop due to Blade inspection Work
- Heating/coolant thermal magnetic failure
- Wait for Converter to be ready
- Battery charging voltage not OK Axis2
- Ground Fault, Rotor
- Estop Activated on Axis 2

The project activity was operational for a total of **11,064.72 hours**, representing **456 days**. However, during the monitoring period **from 01-April-2022 to 30-June-2023 (Inclusive of both dates)**, the project experienced breakdowns for a duration of **42,648 hours, (3.71%)** as detailed in **Appendix 2** of the monitoring report (MR)/ 01/. It is important to note that the plant was not entirely shut down during these breakdown hours; only the affected parts were temporarily taken out of operation.

The verification process involved reviewing the JMRs/25/ and breakdown excel sheet/33/ provided by the project proponent (PP). Additionally, an onsite visit to the project site/32/ was conducted, where it was confirmed that only the affected parts were shut down while the rest of the plant remained operational. This information is consistent with the details mentioned in Section 3.1 and **Appendix 2** of the MR/01/.

During the current monitoring period, all the wind turbine were operational and the project activity has supplied **611,052.53 MWh** of electricity, and thus contributing to **572,433 tCO₂e**. The ex-ante emission reduction for this monitoring period as per registered VCS Joint PD & MR for the current monitoring period is **6,95,876 tCO₂e**, whereas actual emission reductions achieved are **572,433 tCO₂e**, which is **-17.74%** lower than the estimated emission reductions for the current verification period. Further explanation is provided **section 4.5** of this report The ERs achieved in this monitoring period is low due to low wind speed, low PLF and minor breakdowns during this monitoring period.

The assessment team also conducted a verification of the project location. This was accomplished through a desk review using Google Earth pro/21/ and during the onsite visit using GPS map camera software/20/. The latitude and longitude coordinates specified in the registered VCS Joint PD&MR /03/, VCS joint validation/verification report/04/, and VCS MR/01/ were confirmed and found some inconsistency in them which is addressed by PP and a **deviation-03** was also undertaken as stated in **section 3.3** above due to typo error in the geo co-ordinates of WTGs. The Figure **01** below from the google earth pro software shows the entire location of WTGs installed at the site.



2.	MAN 003	N 8.778367	E77.85313
3.	MAN 004	N8.772347	E77.85593
4.	MAN 005	N 8.76965	E77.84825
5.	MAN 010	N8.837225	E77.90158
6.	MAN 011	N8.830439	E77.87491
7.	MAN 012	N8.823836	E77.87463
8.	MAN 013	N8.818242	E77.87136
9.	MAN 015	N8.848419	E77.88881
10.	MAN 016	N8.842678	E77.88212
11.	MAN 017	N8.840242	E77.89114
12.	MAN 018	N8.818681	E77.90023
13.	MAN 019	N8.828872	E77.88701
14.	MAN 020	N8.815636	E77.88268
15.	MAN 022	N8.843161	E77.90273
16.	MAN 026	N8.813792	E77.89095
17.	MAN 055	N8.855319	E77.87854
18.	MAN 079	N8.839344	E77.81342
19.	MAN 082	N8.783961	E77.85901
20.	MAN 115	N8.835708	E77.90985
21.	MAN 125	N8.964742	E77.77809
22.	MAN 126	N9.030178	E 77.83171
23.	MAN 127	N9.026264	E 77.83206
24.	MAN 136	N9.004758	E 77.79832
25.	MAN 146	N8.998322	E 77.81055
26.	MAN 158	N8.992817	E 77.81932
27.	MAN 159	N8.996278	E77.82852
28.	MAN 160	N9.003544	E77.82821
29.	MAN 161	N9.007456	E 77.8177
30.	MAN 162	N 9.011506	E77.80806
31.	MAN 184	N 9.009011	E77.84106
32.	MAN 185	N 9.015131	E77.83923

33.	MAN 189	N 9.019819	E77.851
34.	MAN 194	N 9.033147	E77.87633
35.	MAN 196	N 9.018553	E77.87088
36.	MAN 197	N 9.012342	E77.8682
37.	MAN 199	N 8.999214	E77.8787
38.	MAN 201	N 8.983278	E77.86006
39.	MAN 215	N 8.951119	E77.88529
40.	MAN 222	N 8.963753	E77.91006
41.	MAN 253	N 8.786503	E77.83001
42.	MAN 255	N 8.7963	E77.82353
43.	MAN 258	N 8.814097	E77.81644
44.	MAN 264	N 8.82305	E77.86397
45.	MAN 280	N 8.982508	E77.79321
46.	MAN 297	N 9.03345	E77.83153
47.	MAN 299	N 9.031314	E77.8496
48.	MAN 301	N 8.972153	E77.78008
49.	MAN 304	N 9.042364	E77.85759
50.	MAN 305	N 9.037522	E77.86536
51.	MAN 311	N 9.023358	E77.89529
52.	MAN 312	N 9.031442	E77.91377
53.	MAN 314	N9.022422	E77.96278
54.	MAN 319	N 8.998128	E 77.91341
55.	MAN 320	N 8.978619	E77.91156
56.	MAN 321	N 8.9734	E 77.906
57.	MAN 322	N 8.968036	E77.91684
58.	MAN 323	N 8.958469	E 77.8858
59.	MAN 324	N 8.949781	E77.87146
60.	MAN 326	N 9.004964	E77.91043
61.	MAN 328	N 9.028475	E77.89494
62.	MAN 340	N 9.0148	E77.93431
63.	MAN 341	N 9.022247	E77.93379

64.	MAN 345	N 9.04025	E77.92408
65.	MAN 349	N 9.051353	E77.92259
66.	MAN 350	N 9.045958	E77.92956
67.	MAN 351	N 9.033719	E77.95983
68.	MAN 353	N 8.956272	E77.91134
69.	MAN 356	N 9.018386	E77.9637
70.	MAN 361	N 9.047047	E77.94705
71.	MAN 362	N 9.052819	E77.93588
72.	MAN 366	N 9.076294	E77.92414
73.	MAN 370	N 9.070608	E77.94486
74.	MAN 377	N 9.066478	E77.95506
75.	MAN 378	N 9.088472	E77.94624
76.	MAN 379	N 9.02785	E77.87427
77.	MAN 380	N 8.958842	E77.90397
78.	MAN 388	N 8.953858	E77.79786
79.	MAN 398	N 8.941672	E77.83564
80.	MAN 405	N 8.989708	E77.82627
81.	MAN 412	N 8.974625	E77.83758
82.	MAN 415	N8.983044	E77.84712
83.	MAN 416	N8.975169	E 77.85367
84.	MAN 417	N 8.971194	E 77.84426
85.	MAN 437	N 9.038525	E 77.94094
86.	MAN 443	N 9.020061	E 77.81988
87.	MAN 444	N 8.945711	E 77.83807
88.	MAN 480	N 8.969283	E 77.78793
89.	MAN 481	N 8.97375	E 77.78521
90.	MAN 483	N 8.991119	E 77.78938
91.	MAN 485	N 8.995136	E 77.79921
92.	MAN 486	N8.998583	E 77.79025
93.	MAN 488	N 9.006783	E77.85913
94.	MAN 490	N 8.832925	E 77.83889

95.	MAN 492	N 8.939364	E 77.844914
96.	MAN 493	N 9.019844	E 77.851033
97.	MAN 494	N 9.034158	E 77.84158
98.	MAN 497	N 9.017219	E 77.80858
99.	MAN 498	N 8.764122	E 77.8456
100.	MAN 499	N 8.773289	E 77.86659
101.	MAN 495	N 9.038792	77.886015
102.	MAN 496	N 9.041891	E 77.897636
103.	MAN 504	N 9.003203	E 77.842199
104.	MAN 505	N 8.9978	E 77.848941
105.	MAN 024	N 8.8243	E 77.9042

Assessment team checked the commissioning certificates of all sites/28/ and confirmed that the dates of commissioning for the Project are correct. Assessment team also confirmed during the onsite audit/32/ that there is no change in project design viz., capacity of the WTGs remained the same and the project is implemented as per the description provided in the registered VCS Joint PD&MR /03/. This has been further verified from the registered joint validation/verification report/04/ and previous verification reports/05/.

The verification team conducted a thorough assessment of the implementation status of the project activity and the installed instrumentation. This evaluation included an onsite visit/32/ to verify the technical specifications/29/. The team examined the nameplates and confirmed that the installed modules matched the provided specifications. Additionally, the project proponent (PP) submitted supporting documents detailing the salient features of the wind technology. The relevant information from these documents has been compiled and presented in the **Table 08** below:

Wind Power Project Technology Details

The project activity involves the installation of 105 WTGs of 2.43 MW generation capacity each. The power rating of the WTGs has been verified with the name plates as well as with the technical specifications of WTGs submitted to VKU Assessment/Verification Team by PP and also cross checked from the technical manual of the Manufactures/29/. The same could be verified from the VCS Validation Report/04/ Assessment team confirms that the technical parameters are consistent with the registered VCS Joint PD&MR / 03/.

The Company is using GE make, 2.43 MW⁸ rated capacity WTG having rotor diameter of 116 meters and hub height of 94 Meters, at Tamil Nadu. The technical specifications given below:-

The technical details of WTG are detailed below in the Table 09:

Parameter	Specification
Installed electrical output	2.43 MW
Number of blades	3
Diameter	116 m
Swept area	10,568 m ²
Hub height	94 m
Rated wind speed	11 m/s
Rotor speed	15.68 rpm
Rotational Direction	Clockwise looking downwind
Generator	Doubly fed asynchronous generator
Tip speed @ rated power	85.4 m/s
Orientation	upwind
Speed regulation	Pitch control
Voltage	690.0 V
Aerodynamics brakes	Full feathering
Certifications	IEC 61400-1; IEC class S

Based on the interviews conducted with site personnel and the verification team's onsite visit, it has been confirmed that all quality assurance and quality control (QA/QC) procedures specified in the registered VCS Joint PD&MR version 02 have been followed during the operation of the project activity. The monitoring plan outlined in the registered registered VCS Joint PD&MR and the applied methodology have been effectively implemented, monitoring all the specified parameters in the current monitoring report.

⁸ [https://en.wind-turbine-models.com/turbines/1837-ge-general-electric-ge-2.0-2.7-](https://en.wind-turbine-models.com/turbines/1837-ge-general-electric-ge-2.0-2.7-116#:~:text=The%20rated%20power%20of%20GE,area%20amounts%20to%2010.660%20m%C2%B2.)

[116#:~:text=The%20rated%20power%20of%20GE,area%20amounts%20to%2010.660%20m%C2%B2.](https://en.wind-turbine-models.com/turbines/1837-ge-general-electric-ge-2.0-2.7-116#:~:text=The%20rated%20power%20of%20GE,area%20amounts%20to%2010.660%20m%C2%B2.)

It was observed that the monitoring plan was implemented as per the registered VCS Joint PD&MR /03/ and applied methodology **ACM0002, Version 19.0 /12/**. The organizational role and responsibility as mentioned in the registered VCS Joint PD&MR /03/ is followed onsite. Meters are calibrated as per calibration frequency mentioned in registered VCS Joint PD&MR /03/.

The baseline emission parameters specified in the registered VCS Joint PD&MR/03/ have been verified, ensuring their accuracy and compliance. The PP has provided a declaration as an evidence requirement defined under **section 3.24 clause 3.24.3** of VCS Standard version 4.5/07/ stating that they will not claim credits under any other GHG emission reduction scheme, including the Clean Development Mechanism (CDM), for the present monitoring period under VCS. This declaration ensures that there is no possibility of double counting.

Overall, based on the interviews, onsite visit, and verification of documents, it can be concluded that the project activity has adhered to the necessary procedures, monitoring parameters, emergency preparedness, and baseline emission parameters outlined in the registered VCS Joint PD&MR/03/.

Assessment team concludes the following:

- 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 as per the registered monitoring plan in VCS Joint PD&MR /03/ and MR/01/. However, Deviation 01 relates to the meter reading practice in India is upgrading to optimum level which based on robust technology and requires minimum human intervention. Currently in this monitoring period, the deviation is for Tamil Nadu state project having Project Investor name Mytrah Vayu (Sabarmati) Pvt. Ltd. but not limited to further upgradation at another states of India. Deviation 02 relates to the change in feeder from the registered Joint PD&MR During the time of validation PP was using two feeders i.e Bay-222 and Bay-223. Bay-223 is now being transferred to M/s orange power. Deviation 03 is for section A.1 the capacity in MW were mentioned incorrect due to typographical error. Other than that, no material discrepancies between project implementation and the project description provided in the registered VCS Joint PD&MR /03/
- There are no material discrepancies between project implementation and the project description provided in the registered VCS Joint PD&MR /03/.
- There are no material discrepancies between the actual monitoring system, and the monitoring plan set out in the project description and the applied methodology/12/
- Materiality threshold applied is **1% as per 4.1.10** of VCS Standard version 4.5/07/, It was concluded that the materiality threshold applicable to the project activity based on the type of project i.e., Project is 1%. This effectively means that there is uncertainty inherent in the estimation of emission reduction of 1%. This is consistent with the **section 4.1.10** of VCS standard version 4.5/07/ which is equal to **5063.7 tCO₂e**

- The GHG emission reductions or removals generated by the project have not been included in any emissions trading program or any other mechanism that includes GHG allowance trading/28/.
- The project has not received or sought any other form of environmental credit, or has become eligible to do so since registered VCS Joint validation & verification/04/ or previous verifications/05/
- The project is registered under VCS only and complying with 3.24.5 of the VCS Standard version 4.5/07/; however, PP has submitted the declaration stating/28/, they will not claim same GHG emission reductions of the project from any other GHG program for the current monitoring period when project is seeking to get GHG emission reduction from VCS Audit team also checked the REC mechanism- Renewable Energy Certificate Registry of India (Renewable Energy Certificate Registry of INDIA - Registered RE Generator List (recregistryindia.nic.in))/19/ which confirms that the project is not registered under this mechanism.
- The project activity complies with indicators for sustainable development in the interim approval guidelines for Clean Development Mechanism (CDM) projects from India as discussed under section 1.11 of MR/1/. Assessment team has verified the same during on site visit/32/ and found all the indicators to be effective and applicable for the project activity.
- **According to clause 3.24.7 of VCS Standard 4.5/07/**, specific guidelines are applicable when the producer(s) or retailer(s) of the impacted good or service are identified but not involved in the project or do not possess a website. The project Activity is a wind power project and does not involve any supply chain in the project such as manufacturers, wholesalers, distributors and retailers. So, no indirect upstream and downstream GHG emissions are involved in the project activity. Thus, the Scope 03 emissions are not applicable in this project activity.
- The project activity complies with 03 indicators for sustainable development in the interim approval guidelines for Clean Development Mechanism (CDM) projects from India as discussed under section 1.11 of MR. In which SDG indicator taken by PP are.

The project activity has implemented activities that results in 3 SDG Contributions; 7.2, 8.6 &13.0

- **7.2 i.e. (Renewable energy share in the total final energy consumption)** As a part of this project activity the renewable electricity supplied **1,978,949 MWh** to Indian grid till end of this monitoring period. This has helped to strengthen the renewable energy share in the energy mix. For the current monitoring period project has supplied **611,052.53 MWh** of electricity to Indian grid. Assessment team has referred previous verification reports/05/ to verify the claims and found that the above claimed renewable electricity supplied to Indian grid to be correct.
- **8.6 i.e. (Proportion of youth (aged 15-24) not in education employment or training):** As part of this project, 107 people have been employed, and three training sessions have been provided by the PP until the current monitoring period. During the current

monitoring period, 10 people have been employed, and two training sessions have been provided by the PP. Assessment team has referred previous verification report / 05/ and current employment record, training records/31 / to verify the claims and found the above claimed to be correct.

- **13.0 i.e. (Tonnes of greenhouse gas emissions avoided or removed)** Due to installation of this project activity, PP has prevented the release **1,853,869 tCO₂e** emissions into the atmosphere till end the current monitoring period. For the current monitoring period the project activity has prevented the release of **572,433 tCO₂e** emissions.

Assessment team has referred previous verification reports/05/ to verify the claims and found that the above claimed emission reductions to be correct Thus, proving that the project generates eco-friendly, GHG free power which contributes to sustainable development of the region Assessment team has referred previous verification report/05/ to verify the claims and found that the above claimed emission reductions to be correct Thus, proving that the project generates eco-friendly, GHG free power which contributes to sustainable development of the region.

Table No.: Audit History Table - 10-

Audit type	Monitoring Period Dates (Inclusive of both start and end dates)	Program	Number of Years	VVB Name	VCUs Issued	Conclusion
Validation and Verification	30-January-2019 to 30-November-2019 (Inclusive of both dates)	VCS	10 Months and 1 Day	Earthhood Services Private Limited	289,425 tCO ₂ e	VKU's assessment team has conducted a cross-verification of the emission reductions reported in the monitoring report for MP 1 with the Joint Validation and Verification Report for MP 1. Additionally, the issuance of VCUs was cross-verified with the <u>VCU's issuance record</u> link available on the project's web page/18/
Verification	01-Decemeber-2019 to 31-March-2020 (Inclusive of both dates)	VCS	4 Months 00 days	LGAI Technologi cal Center S.A.	100,366 tCO ₂ e	VKU's assessment team has cross verified the emission reductions reported in the monitoring report for MP 2 with the verification report for MP 2

						and VCU's issued were cross verified from the <u>VCU's issuance record</u> link available on the project webpage/18/
Verification	01-April-2020 to 31-May-2021 (Inclusive of both dates)	VCS	1 Year and 2 Months 00 days	KBS Certificatio n Services Pvt. Ltd	504, 504 tCO2e	VKU's assessment team has conducted a cross-verification of the emission reductions reported in the monitoring report for MP 3 with the Joint Validation and Verification Report for MP 3. Additionally, the issuance of VCUs was cross-verified with the <u>VCU's issuance record link</u> available on the project's web page/18/
Verification	01-June-2021 to 28-February- 2022 (Inclusive of both dates)	VCS	9 Months 00 days	LGAI Technologi cal Center S.A.	366,103 tCO2e	VKU's assessment team has conducted a cross-verification of the emission reductions reported in the monitoring report for MP 4 with the Joint Validation and Verification Report for MP 4. Additionally, the issuance of VCUs was cross-verified with the <u>VCU's issuance record</u> link available on the project's web page/18/
Verification	01-March-2022 to 31-March- 2022 (Inclusive of both dates)	VCS	00 year 1 Month 31 days	LGAI Technologi cal Center S.A.	21,038 tCO2e	VKU's assessment team has conducted a cross-verification of the emission reductions reported in the monitoring report for MP 5 with the Joint Validation and Verification Report for MP 5. Additionally, the issuance of VCUs was cross-verified with the <u>VCU's issuance record link</u> available on the project's web page/18/

Verification	01-April-2022 To 30-June-2023 (Inclusive both dates) (Current Monitoring Period)	VCS	1 Year and 3 Months 00 days	VKU Certification Pvt. Ltd.	572,433 tCO ₂ e	VKU assessment team conducted the verification for current monitoring period (MP-6) and verified the emission reductions reported in the ER Sheet/2/ and MR/1/ via supporting documents.
Total	30-January-2019 to 31-March-2022 (Inclusive of both dates)	VCS	4 Years, 5 Months and 1 Day	N/A	1,853,869 tCO ₂ e	The Total emission Reduction prevented by the project activity since commissioning was verified by VKU's Assessment team via previous verification reports and other supporting documents

The project is contributing in sustainable development by generating electricity and reduction of CO₂e emissions due to implementation of project activity and generates employment to the local stakeholders. Through Project activity economic development has been achieved in the project location by creating opportunities of employment during the project lifetime. Project owner monitors the carbon emission with help of the record of electricity generated.

In view of the information's as verified above the assessment team is able to conclude that the project has been implemented as described in the registered VCS Joint PD&MR/03/, All the above stated information was verified by VVB during onsite visit/32/ and site personnel interviews /33/ and desk review of VCS Joint PD&MR/03/, VCS Joint validation & verification report/04/ and previous verification reports/05/ already approved and uploaded on Verra's webpage which is deemed accurate and satisfactory to VKU's assessment team..

4.2 Safeguards

4.2.1 No Net Harm

The project activity and the initial project activity instance being wind power project, it does not involve any potential negative environmental and socio-economic impacts.

Being a renewable wind-based power generation project, it is considered as one of the cleanest forms of electricity generation projects. The wind-based power generation neither involves any type of emission in air nor generates any kind of effluent to the environment during its construction and operation phase. Project activity is not having any negative environmental impacts.

Moreover, renewable wind-based power generation projects are promoted by Indian government. According to Final Document on Revised Classification of Industrial Sectors Under Red, Orange, Green and White Categories (**29-February-2016**), the wind power projects come under White category of industries which are practically non-polluting. Therefore, does not require an Environmental Impact Assessment (EIA) and there is no necessity of obtaining the Consent to Operate.

As per **section 04 page 31** of the report published by Ministry of New and Renewable Energy (MNRE) on September 2013 (Developmental Impacts and Sustainable Governance Aspects of Renewable Energy), "As established by life-cycle assessment, RE projects have comparatively low environmental externalities that too are limited to project development phase. The RE projects don't generate solid or liquid effluents during operations and thereby pollution of land, surface water or ground water resources is not anticipated from such projects. During the operations phase the impacts on the surrounding environment are negligible and are reversible in nature and can be mitigated by proper Environmental Management plan."

Thus, there is no harm identified from the project and hence no mitigations measures are applicable.

VKU concluded that the project has contributed to the region's labour force by creating job opportunities, resulting in improved socio-economic conditions in adherence to the **section 3.19**, clause **3.19.1 of VCS Standard version 4.5/07**. Overall, the project has demonstrated a net positive impact on both the socioeconomic and environmental aspects of the project region.

4.2.2 Local Stakeholder Consultation

The Project is already registered with VCS and registered VCS Joint PD&MR/03/; sections 2.2 describe the Local Stakeholder Consultation Process as in-line with VCS requirement. The Local Stakeholder Meetings were organized for local stakeholder consultation and informed local stakeholder regarding the meeting. The followings are the local stakeholders for the project activity:

- NGOs
- Governmental agencies
- Contractors
- Local community
- Local village administration
- Technology suppliers
- Local vendors

The details of the Stakeholder Meetings are:

Date of Invitation – **25-July-2017**

Date of Meeting – **01-August-2017**

The stakeholders of the project activity were invited to attend the stakeholder meeting. Personal invitations were also sent to the prominent members (villagers, local community people) of the regions in the vicinity.

A discussion was held in which the views of the local stakeholders were addressed. The stakeholder meeting was at the time of validation of this project activity.

Representative of the project proponent explained the purpose of the meeting and detailed each question in the questionnaire. He further explained about the advantages of the wind energy generation and explained how the project would help in reducing demand supply gap in environment friendly manner.

According to the feedback received from the stakeholders, due to the erection of wind farms the socioeconomic situation in the area and the village people's living standard has been improved. It has not only provided employment but also significantly contributed to the infrastructure development likes roads. Local Stakeholder consultation had been carried out during VCS registration of this project activity. There were no comments that required follow up action from PP.

The PP has also established and maintained a grievance record where stakeholder complaints are recorded, and if found genuine, they will be addressed immediately. During the current monitoring period, no negative comments have been received from local stakeholders. Consequently, no mitigations have been applied.

However, no negative feedback received during the current monitoring period as verified from grievance register photograph submitted by PP/30/ also, assessment team has interviewed some local stakeholders mentioned in **Table No.-06**. which confirms that no major grievances over there.

4.3 AFOLU-Specific Safeguards

As the project comes under the category of NON-AFOLU projects therefore this section does not apply for this verification. Hence Not Applicable

4.4 Accuracy of GHG Emission Reduction and Removal Calculations

The project monitoring has been carried in accordance with the registered VCS Joint PD&MR /03/ and the monitoring report/01/. The monitoring plan laid in the registered VCS Joint PD&MR /03/ is being followed at the site/32/. The assessment team has verified the information flow (from data generation, aggregation, to recording, calculation and reporting for these parameters including the values) in the MR/01/. The emission reductions are purely based on the net electricity generated and exported from the WTGs. PP has provided all the sufficient data for current monitoring period. The values of the parameter net electricity generation supplied to the grid to derive the GHG emission reduction can be very well correlated between the data sets and ER spreadsheet/02/ provided by PP. The verification of each monitoring parameter has been discussed later in section 4.5.

The only monitoring parameter in the project activity is “**Quantity of net electricity supplied to the project (Wind) plant/unit to the grid in year y**”, $EG_{pl,y}$ (MWh). This parameter is monitored through the reading of bulk energy meters installed.

Monitoring consists of metering the net electricity supplied to the grid ($EG_{pl,y}$) on monthly basis. This parameter is based on the monthly Regional Energy Account undertaken by Southern Regional Power Committee, CEA, Ministry of Power, Govt. of India. To the meters at the GSS, there are WTGs of PP and other project connected. Hence, the REA report reflects the total generation from all the WTGs from the project alone, managed by the SECI personal and project representatives. It is to be noted that though the PP or their representatives are available during meter reading, the calculations of net electricity supplied to grid is completely under purview of SECI and PP does not have any control on it.

The metering system comprises of two individual special energy meters (SEMs) installed at the Government Power substation (PGCIL) as called (GSS) and check meter installed at pooling substation. These are connected via four transmission lines of 230 kV. In case, anyone transmission line is not in service then complete load will be shifted to other transmission line which is in operation.

In DSM, PP have to forecast energy generation in day time blocks (In India, **15 minutes each block, total 96 blocks**) well in advance. The electricity supplied or transmitted is sourced from “Regional Energy Account” which is publicly available document issued by the ‘**Southern Regional Power Committee**’.

The total Energy schedule and the Actual values (which is the actual Net delivered) is maintained by the **Southern Regional Power Committee (SRPC)** Secretariat, Central Electricity Authority,

Government of India. Regional Energy Account (monthly net export) for every month in respect of Southern Region is uploaded on the SRPC website, www.srpc.kar.nic.in. Since the document is provided by government nodal agency, therefore no any cross-checking is required. The invoicing is done on the forecasted value. The actual generation deviation from the forecasted values is penalized, it depends upon the deviation magnitude.

The monitoring plan specified in the registered VCS Joint PD&MR/03/, is diligently being followed at the site. The assessment team has conducted a thorough verification of the entire information flow, starting from data generation and aggregation to recording, calculation, and reporting of the relevant parameters in the Monitoring Report /01/. The emission reductions are based on the net electricity generated and exported from the project.

PP has provided all the necessary data for the current monitoring period, ensuring a comprehensive and accurate assessment. The values of the parameter "**Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh)**", which were used in deriving the greenhouse gas (GHG) emission reduction, have been found to be well correlated between the data sets and the ER calculation spreadsheet/02/ provided by PP.

The appropriateness of default values used in the monitoring report is elaborated below:

Table No: 11 Data and Parameters Available at Validation or Ex-ante parameter.

Parameter	Unit	Description	Value	MOV
$EF_{grid,OM,y}$	tCO ₂ /MWh	Operating Margin CO ₂ Emission Factor in year y	0.9610 tCO ₂ /MWh is consistent with the registered VCS Joint PD&MR/03/ and calculated from CEA database, Version 14, December 2018 ⁹	The values are verified through desk review of the MR submitted /01/ and registered VCS Joint PD&MR /03/ which is found acceptable
$EF_{grid,BM,y}$	tCO ₂ /MWh	Build Margin CO ₂ Emission Factor in year y	0.8644 tCO ₂ /MWh is consistent with the registered VCS Joint PD&MR /03/ Calculated from CEA database, Version 14, December 2018 ¹⁰	The values are verified through desk review of the MR submitted /01/ and registered VCS Joint PD&MR /03/ which is found acceptable

⁹ https://cea.nic.in/wp-content/uploads/baseline/2020/07/user_guide_ver14.pdf

¹⁰ https://cea.nic.in/wp-content/uploads/baseline/2020/07/user_guide_ver14.pdf

$EF_{grid,CM,y}$	tCO ₂ /MWh	Combined Margin CO ₂ Emission Factor in year y	0.9368 tCO ₂ /MWh is consistent with the registered VCS Joint PD&MR/03/Calculated from CEA database, Version 14, December 2018 ¹¹	The values are verified through desk review of the MR submitted /01/ and registered VCS Joint PD&MR /03/ which is found acceptable

According to applicable methodology ACM0002; version 19.0/12/- Since project activity is a wind power project, no other kind of fossil fuel is used hence according to para 36 of the methodology zero project emissions are considered for this project activity. For leakage emissions; zero emissions are considered according to section 5.6 of the applied methodology/07/,

Hence, LE_y= 0 & PE_y= 0

Methods and formulae set out in the project description for calculating actual emissions for current monitoring period.

The calculation of emission reduction has been done in accordance with the applied methodology used i.e., ACM0002 Version 19.0 /12/. The equation used for calculation of baseline emission as per para 42 of the applied methodology given below:

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

Where:

BE_y: Baseline emissions in year y (tCO₂e/yr)

EG_{PJ,y} : Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the VCS project activity in year y (MWh/yr)

EF_{grid,CM,y}: Combined margin CO₂ emission factor for grid connected power generation in year y calculated using the latest version of the “Tool 07: Tool to calculate the emission factor for an electricity system” (tCO₂e/MWh).

Calculation of EG_{PJ,y}

If the project activity is the installation of a Greenfield power plant,then:

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

Where;

¹¹ [Microsoft Word - User Guide ver 14_2018 \(cea.nic.in\)](#)

$EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the VCS project activity in year y (MWh/yr)

$EG_{facility,y}$ = Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh/yr)

Table No. 12; Methods and formulae set out in the project description for calculating estimated emissions for current monitoring period.

Estimated Emission Reduction as in VCS Joint PD & MR/3/ for the equivalent period of the current Monitoring period from, 01-April-2022 to 30-June-2023 (Inclusive of both the days):	
Monitoring Period Start Date	01-April-2022
Monitoring Period End Date	30-June-2023
Days in Current Monitoring period	456
Annual VCUs as per VCS Joint PD & MR	5,57,007 tCO ₂ e
Estimated Emission Reduction as in VCS Joint PD&MR- for the equivalent period of the current Monitoring period	(Annual Estimated GHG emission reductions as per revised VCS Joint PD & MR- /Total days in a year) *days in current monitoring period = $(557,007 / 365) * 456 = 695,876$ tCO ₂ e
Actual Emission Reduction as per MR and ER during current Monitoring period	572,433 tCO ₂ e
Percent difference	-17.74% lower then the estimated
PLF as per registre PD	27.15%
PLF for current monitoring period	20.92%
Breaching value	33.11%

PP has submitted all the evidences like REA (JMRs) /25/and Invoices /24/ to VKU Assessment team for verification and assessment of ER Sheet/02/

Hence VKU Assessment team can state that the calculation method and formulae used in calculating baseline emission is following the methodology used i.e., **ACM0002: "Grid-connected electricity generation from renewable sources" - version 19.0 /12/**. The applied default values, emission factors, and assumptions in the calculations are all reasonable. The assumptions, emission factors and default values that were applied in the calculations are justified.

4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

During the verification and onsite audit, all relevant documents were checked to assess the correctness and quality of data submitted by the project proponents, which are used to determine emission reductions.

All records needed for monitoring are archived in line with the requirements of the registered monitoring plan. No significant, lack of evidence and missing data were detected during verification. Hence, the verification team confirms that the monitoring system ensures required quality of the monitoring system to ensure the quality of the monitored data. All internal data are subjected to QA/QC measures.

The only monitoring parameter in the project activity is **EG_{PJ, y}** (MWh): Quantity of net electricity supplied by the project (Wind) plant/unit to the grid during the monitoring period. This parameter is based on the monthly Regional Energy Account undertaken by Southern Regional Power Committee, CEA, Ministry of Power, Govt. of India.

The table below describes how the parameter **EG_{PJ, y}**(MWh): is to be measured according to the monitoring plan, & how the same has been verified in order to confirm that the actual monitoring complies with the monitoring plan. Monitored data has been thoroughly assessed and how the calibration requirements are met has been mentioned in **Table below -13**

Parameter	EG _{PJ, y} (MWh): Quantity of net electricity generation supplied by the project (wind) plant/unit to the grid during the monitoring period	
Means of verification		
	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	Continuous measurement and monthly recording for net electricity generation supplied by the project (wind) plant/unit to the grid during the monitoring period. The export & import readings from Check Meter installed at the inter-connection point (Pooling Point) at the project site will be used for monitoring of net electricity exported to the grid
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring	Yes, the reporting frequency comply with the monitoring plan as outlined in the registered VCS Joint PD&MR/03/ and applied monitoring methodology/12/. This was verified by assessment team during desk review and by Team Leader during onsite visit and interviews with site personnel/33/.

	methodology? (Yes / No)					
	Monitoring equipment	Energy meters are used with specifications:				
		Meter Sl.No.	Make	Accuracy Class	Initial Meter calibration date	Due date of calibration
		SA0013A (Main)	Secure	0.2s	26-June- 2021	25-June- 2026
	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?	The accuracy of the monitoring equipment is 0.2s, which is as per the registered VCS Joint PD&MR /03/ which is as per the norm defined in the PPAs/22/.				
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes. The accuracy of monitoring equipment's is valid for the entire range (0.2s) which is as per the registered VCS Joint PD&MR /3/ This was assessed by checking the calibration certificate of the energy meters /23/. Thus, the assessment team based on the calibration certificates /23/ states that the accuracy is valid for the entire measuring range.				

	Calibration frequency /interval:	Calibration frequency of the energy meters is once in 5 years as per the <u>CEA guidelines 17- March- 2006</u> mentioned in registered monitoring plan in VCS Joint PD & MR /3/. The calibration was carried out by Yadav Measurement Private Limited which is NABL accredited laboratory (Lab ID- 45530, Certificate Number- TC-6594-). The calibration is carried out as per the PPA norms /22/, moreover it is beyond the control of PP. The government agency itself acts as a third party for the PP to witness the calibration conducted.
	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, or as per the manufacturer's specifications?	Yes, the calibration frequency is once in 5 years as outlined in the registered VCS Joint PD&MR /03/which is in accordance with the national standards i.e., Clause 18 of Central Electricity Authority (Installation and Operation of Meters) ¹² . This was also confirmed during interview with onsite personnel /36/,
	Is the calibration of measuring equipment carried out by an accredited person or institution?	The calibration was carried out by Yadav Measurement Private Limited which is NABL accredited laboratory (Lab ID- 45530, Certificate Number- TC-6594-) and was verified during onsite personnel meeting interviews /33/ with PP and calibration certificates submitted/23/ by PP.
	Is(are) calibration(s) valid for the whole reporting period?	Calibration of energy meters is valid for whole reporting period for project activity.
	Is the calibration carried out for a	Yes, as per the calibration certificates, error variation observed is lesser than the error variation specified. Hence,

	measuring range comparable with the range for which measurements have been carried out?	it is within the measurable range. The calibration is carried out appropriately as per the registered monitoring plan. Under standard procedures adopting clause 8.3.2 of IEC 62053-22:2003, the meters were applied with 115% of reference voltage and no pulse was observed and hence was conforming. the reference voltage was 3x63.5Vp-n, reference current is 1A and maximum current is 2A.
	How were the values in the monitoring report verified?	Cumulative value of EG_{PJ,y}, for entire monitoring period is reported in the monitoring report/01/, and monthly values are mentioned in the ER calculation sheet/02/. The monthly values were verified from Regional Energy Account issued by Southern regional Power Committee under Central Electricity Authority, Ministry of Power, Government of India and cross verified with the help of invoices issued by PP to PTC India Ltd./24/ and they are found to be consistent. Value of this parameter for the current monitoring period was verified as 611,053 MWh.
	If applicable, has the reported data been cross-checked with other available data?	The monthly reported values of EG_{PJ,y}, were further cross checked with the monthly invoices raised by PP /24/ to PTC India Ltd. and found to be consistent.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	On site personnel interview/33/ with the project stakeholder of the project activity confirms that the necessary QA/QC procedures are in place. Data management system is effective and reliable for the net electricity supplied by the project (wind) plant/unit to the grid during the monitoring period.
	In case project proponents have temporarily not monitored the parameter, has either i) a deviation been	No such issue is applicable for this monitoring period

	approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	
Findings	CL#01 was raised and resolved	
Conclusion	Parameter EG_{PJ,y} (MWh) 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 emission reduction calculation for the project activity is estimated based on the electricity supplied by the WTGs. Since 100% data was verified, the team can ascertain that the values taken for emission reduction calculation are free from material errors and materiality threshold is within the limits of the project scale i.e., 1.	

Calibration of meters

During the verification assessment of the project activity, accuracy of all the metering equipment's has been checked and found appropriate. The installation and working conditions of the meters were checked during the site inspection and were found to be satisfactory by VKU. Details of meters are provided in below table:

Calibration details of meters

Meter and Calibration details of meters installed in **Table -14** below:

Meter Sl.No.	Make	Modal	Class	Initial Meter calibration date	Due date of calibration	Installed at location
SA0013A, (Main meter)	Secure	Premier	0.2 s	26-June-2021	25-June -2026	230/33 kV Maniyachi Pooling Sub- station.
SA0014A, (Check meter)						
SA0016A (Standby meter)						

The energy meter calibration certificates/23/ are checked and found that the calibration details provided in the MR /01/ are correct. From the verification of above table, verification team also

confirms that the energy meter calibrations are valid for the complete monitoring period i.e., from **01-April-2022 to 30-June-2023** (Inclusive of both dates).

The verification team has checked all the meters and confirmed that the meters were working satisfactorily. Also, the calibration of meters is completely under purview of state utility and PP has no control over the same as confirmed through interviews of site personnel and PPAs signed by PP with state utilities /22/.

Hence it can be concluded that the approach followed by the PP is conservative and in line with the guidelines provided under paragraph 3.4.2 of VCS Validation and Verification Manual; Version 3.2/08/.

The registered VCS Joint PD&MR/03/& MR/01/ and site audit observations confirm that the metering equipment are sealed and maintained by the state utility.

Further the Monitoring of the project activity is performed by PP as per the following established procedure:

- **Data collection and archiving** - Copies of the monthly break-up sheet, invoices raised on DISCOM and sales receipts will be retained and archived for the entire crediting period plus two years by the project investor.
- **Emergency preparedness** - The project activity has not resulted in any unidentified activity that can result in substantial emissions from the project activity. No need for emergency preparedness in data monitoring is visualized. In the unlikely event of failure of all Main and Standby meter installed at PPGCIL Substation, where all the faulty meters are required to be repaired or replaced simultaneously, the export & import readings from Check Meter installed at the inter-connection point (Pooling Point) at the project site will be used for monitoring of net electricity exported to the grid.
- **Personnel training** - In order to ensure a proper functioning of the project activity and a properly monitoring of emission reductions, the staff is trained. The plant helpers are trained in equipment operation, data recording, reports writing, operation and maintenance and emergency procedures in compliance with the monitoring plan.
- **QA/QC procedures - QA/QC procedures:** Energy meters are calibrated once in a five year and faulty meter will be duly replaces immediately. The entire responsibility of this task lies with the state utility. The meter has an accuracy class of at least 0.2s. TNEB has an on-site testing & calibration arrangement; hence there is no need to dismantle the meter for calibration. In case the meters are found faulty and hard to calibrate against the prescribed accuracy class the meter will be replaced by the state utility. If during any of monthly measurement, main meter is found to be beyond permissible limit of error, then meter shall be calibrated immediately For the period there after the measurements shall be continued in accordance with the calibrated main meter.

- Power Evacuation Procedure:** The voltage generated at the rotor is stepped up from 690 V ac to 33 kv ac. Further at Mytrah Pooling substation voltage is stepped up from 33kv to 230 KV having Indo tech transformer of capacity 2.6 MVA and then transmitted to GSS (PGCL. Internally SCADA is installed for automatic monitoring. The project is connected by 230 kV and the site substation is connected to PGCIL and further transmitted to Indian grid. The GSS transformer capacity is 2X 150 MVA and make is Prime Meidem. There is only dedicated feeder i.e., BAY 220 connected to the project activity.

Power will be evacuated through 230KV transmission line is connected to PGCIL Tuticorin GIS PS (230/400 Kv) at District Tuticorin. Connectivity and LTA Permission have been received from PGCIL in the name of the Company for 250 MW capacity. There is no change from the previous monitoring scenario.

All the data items monitored under the monitoring plan is being kept for the end of crediting period or till the last issuance of VCUs for this project activity, whichever occurs later. The data is archived both electronically and manually, and kept in safe storage by PP.

The assessment team has verified the monthly Regional Energy Account issued by Southern regional Power Committee under Central Electricity Authority, Ministry of Power, Government of India which reflects the total generation from all the WTGs from the project alone, managed by the SECI personal and project representatives. It is to be noted that though the PP or their representatives are available during meter reading, the calculations of net electricity supplied to grid is completely under purview of SECI and PP does not have any control on it.

In view of the above discussion the assessment team is able to confirm that evidence used to determine the GHG reductions and removals are sufficient and appropriate with respect to quality and quantity.

GHG Calculations:

The emission reduction calculated as per the applied methodology equals the baseline emissions (project emissions and leakage emissions for such project activities is considered zero).

The formula provided for the calculation of emission reductions or removals is:

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

Where:

BE_y: Baseline emissions in year y (tCO₂e/yr)

EG_{PJ,y}: Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh)

EF_{grid,CM,y}: Combined Margin CO₂ emission factor in year y in tons CO₂/MWh

Calculation of $EG_{PJ,y}$ ¹³

If the project activity is the installation of a Greenfield power plant, then:

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

Where:

$EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr)

$EG_{\text{facility},y}$ = Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh/yr)

Table No. 15 shows the calculation ER generation during current monitoring period out of net electricity supplied to grid

Parameter	Unit	Value
$EG_{PJ,y}$	MWh	611,052.53
$EF_{\text{grid,CM},y}$	tCO ₂ e	0.9368
BE_y	=	$611,052.53 \times 0.9368$
	=	572,433 tCO₂e (Round)

Table No. 16; The site and Vintage wise generation of ERs for the current monitoring period is presented below

Vintage-wise calculation	Generation, MWh
Year	
2022 (01-April-2022 to 31-December-2022)	411,742.23
2023 (01-January-2023 to 30-June 2023)	199,310.31
Total	611,052.53 MWh

As per registered VCS Joint PD&MR/03/, project activity is expected to reduce emissions by **6,95,877 tCO₂e** for the current monitoring period, whereas the actual emission reductions achieved are **572,433 tCO₂e**, i.e., **-17.74%** lower than what was anticipated. The actual PLF achieved for the generated energy in this monitoring period is **20.92%** whereas as per the VCS Joint PD & MR/03/ the breaching value of PLF is **33.11%**. The achieved **20.92%** PLF is

¹³ <https://cdm.unfccc.int/UserManagement/FileStorage/58IAGB7SZUDE02VN6LYM30K41HFPRQ>

- lower than the estimated PLF value in registered joint PD&MR/03/, however it is still within the benchmark value of **33.11%**.

Assessment team verified the same via PLF analysis mentioned in ER sheet/02/ and an independent assessment of the PLF as stated in table above, this is evident from the calculation that the achieved PLF is lower than the estimated PLF but it is within the benchmark value of **33.11%**. hence the lower generation is accepted by VKU assessment team.

In section 4.4 and 4.5 of this report, section 5.4 of MR /01/ and in ER sheet/02/ calculations has been stated which has been verified by the assessment team from REA (JMRs) issued to PP by SRPC/25/ & Invoices issued by PP to state electricity authority /26/ submitted to VVB by PP as evidence. Hence VVB verified that the calculation method and formulae used in calculating baseline emissions is in compliance with the methodology used i.e., **ACM0002 Version 19.0 /12/**.

The verification team attests to correctness of the formulas and methodologies used to compute baseline emissions. Applied default values, emission factors, and assumptions in the calculations are all reasonable. Verification team attests to the correctness of formulas and methodologies used in calculation of baseline emissions

Assumptions, emission factors and default values applied in the calculations are justified. Actual emission reduction during this period of 15 months from **01-April-2022 to 30-June-2023 (Inclusive both the dates)** are **-17.74 %** lower than the estimated emission reductions. We as VVB accepted this as this is mainly due to the minor breakdowns hours observed and a due to variation in climate conditions such as wind pattern and flow rate throughout the year. These factors are not within the direct control of the project participant hence acceptable by VKU and it is as per registered VCS Joint PD&MR /03/.

All the data were made available and have been monitored as per required monitoring frequency. The means of verification for the values of parameters, used for baseline emission calculation, is described above.

VKU is of the opinion that this method of calculation of emission reductions is accurate and results in conservative estimation of emission reduction and is in line with the applicable VCS requirements set out in section 3.15 of VCS Standard version 4.5/07/ and that the verification of the GHG statement was conducted in accordance with **ISO 14064-3; 2019/36/**

4.6 Non-Permanence Risk Analysis

Since this is not an AFLOU project hence this section is not applicable.

5 VERIFICATION OPINION

VKU Certification Pvt. Ltd. (referred as VKU) declares that it has conducted the sixth verification under the first crediting period from **30-January-2019 to 29-January-2029** (Inclusive of both dates), for the project activity **"250 MW Wind Power Project By Mytrah Energy"** in India. The reported emission reductions for this project activity, with VCS Registry Project ID **2020**, during the monitoring period from **01-April-2022 to 30-June-2023 (Inclusive of both dates)**, amount to **572,433 tCO₂e**. These reported reductions have been assessed in accordance with the relevant requirements outlined in the VCS Standard; Version 4.4/39/ and 4.5/07/.

The project proponents of the "250 MW Wind Power Project By Mytrah Energy" is responsible for:

- The preparation of greenhouses gas emissions data and the reported greenhouse gas emission reductions from the project on the basis set out in the monitoring plan contained in the registered VCS Joint PD&MR version 02 dated 20-December-2019/03/.
- The development and maintenance of records and reporting procedures in accordance with that plan, including the calculation and determination of greenhouse gas emission reductions of the project.
- It is the responsibility of VKU to express an independent verification opinion about the project's conformity with the requirements of VCS Standard; Version 4.4/39 /and 4.5/07/ and GHG program applied, on the reported greenhouse gas emission reductions from the project.

Based on documented evidence and corroborated by an on-site assessment, VKU can confirm that:

- The project has been implemented and operated as per the registered VCS Joint PD&MR version 02 /03/;
- The monitoring report and other supporting documents provided are complete and verifiable and in accordance with the applicable VCS Standard version 4.5/07/ requirements;
- The monitoring is in place as per the applied baseline and monitoring methodology;
- The monitoring plan in the registered VCS Joint PD&MR version **02 dated 20-December-2019/03/** is as per the applied baseline and monitoring methodology/12/.

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

It is VKU's opinion that the GHG emission reduction stated in the monitoring **report version 5.0 dated 08-March-2024** for the **"250 MW Wind Power Project By Mytrah Energy"** in India for the period from **01-April-2022 to 30-June-2023** (Inclusive of both dates) are fairly stated.

Opinion	Final Documents	Monitoring Period	Emission Reductions achieved	Remarks
☒ Positive opinion ☐ Negative Opinion Adverse Opinion ☐ Qualified Opinion ☒ Modified Opinion ☐ Disclaimed Opinion ☐	Monitoring Report Version 5.0 dated 08-March-2024 Emission Reduction Sheet Version 5.0 dated 08-March-2024	01-April-2022 to 30-June-2023 (Inclusive of both dates)	572,433 tCO₂e	The GHG emission reductions are calculated on the basis of approved methodology ACM0002: Grid-connected electricity generation from renewable sources; Version 19.0 /12/ and the monitoring plan included in the registered VCS Joint PD&MR version 02 of 20-December-2019/3/ . Hence VKU is able to certify that the emission reduction from the project during the monitoring period 01-April-2022 to 30-June-2023 (Inclusive of both dates) amounts to 572,433 tCO₂e is in line with the applicable VCS requirements set out in section 3.15 of VCS Standard; Version 4.5/07/ and that the verification of the GHG statement was conducted in accordance with ISO 14064-3; 2019. /36/

Hence VKU is able to certify that the emission reduction from the project during the monitoring period **01-April-2022 to 30-June-2023** (Inclusive of both dates) amounts to **572,433 tCO₂e** is in line with the applicable VCS requirements set out in section 3.15 of VCS Standard version 4.5/07/ and that the verification of the GHG statement was conducted in accordance with ISO **14064-3; 2019/36/**.

The VVB hereby issues a positive and unmodified opinion in accordance with **ISO 14064-3:2019, /36/** and **ISO 14065:2020 /37/ Section 09- Clause 9.7.1.6 & 9.7.2**. This opinion also meets the requirement stipulated under **ISO/IEC 17029:2019, /38/ Section 9.7** with a reasonable level of assurance for the reported GHG emission reduction data which is free from any material misstatement and is sufficiently supported by evidences provided to VVB by PP tabulated in **Table 03 of this report**

Verification period: From 01-April-2022 to 30-June-2023 (Inclusive of both dates)

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)
Year 2022 From 01-April-2022 to 31-December-2022 (Inclusive of both dates)	385,720	0	0	385,720
Year 2023 From 01-January-2023 to 30-June-2023 (Inclusive of both dates)	186,713	0	0	186,713
Total	572,433	0	0	572,433

Comparison of Ex-Ante emission reductions/removals and Achieved emission reductions/removals under this grouped project are summarized below:

Monitoring Period dates: 01-April-2022 to 30-June-2023 (Inclusive of both dates)

Number of Days: 456 Days

Table 17: Comparison of ex-ante and achieved ERR values under sixth MP

Year	Ex-ante emissions reductions/removals	Achieved emissions reductions/removals	Percent difference	Justification for the difference
01-April-2022 to 31-December-2022 (Inclusive of both dates)	419,662. tCO ₂ e (Vintage 2022)	385,720 tCO ₂ e	-8.09%	During the current monitoring period, the plant underwent some minor breakdowns which is 3.71% of operating hours of 105 WTGs. The generation is also less due to lower PLF of 24.95% achieved during this vintage of current monitoring period which is lower as compared to registered PLF of 27.15%. This is also due to variation in climate conditions such as wind pattern and flow rate throughout the year which are beyond the control of the Project Proponent. Hence the actual emission reductions are -8.09% lower as compared to estimated ERs for this vintage
01-January-2023 to 30-June-2023 (Inclusive of both dates)	276,214 tCO ₂ e (Vintage 2023)	186,73 tCO ₂ e	-32.40%	During the current monitoring period, the plant underwent some minor breakdowns which is 3.71% of operating hours of 105 WTGs. The generation is also less due to lower PLF of 17.19% achieved during this vintage of current monitoring period which is lower as compared to registered PLF of 27.15%. This is also due to variation in climate conditions such as wind pattern and flow rate throughout the year which are beyond the control of the Project Proponent. Hence the actual emission reductions are -32.40% lower as compared to estimated ERs for this vintage

01-April-2022 to 30-June 2023 (Inclusive both the dates)	695,876 tCO ₂ e	572,433 tCO ₂ e	-17.74%	During assessment it was observed that the estimated emission reduction to be achieved from the project activity for the current monitoring period was 695,876 tCO ₂ e whereas actual emission reductions achieved are 572,433 tCO ₂ e, which is approximately -17.74% lower than the estimated emission reductions. This is also due to variation in climate conditions such as wind pattern and flow rate throughout the year which are beyond the control of the Project Proponent. Hence Acceptable.
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APPENDIX A: ABBREVIATIONS

Abbreviations	Full texts
BE	Baseline Emissions
BEF	Baseline Emission Factor
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CL	Clarification Request
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
DNA	Designated National Authority
EF	Emission Factor
ER	Emission Reductions
FAR	Forward Action Request
GHG(s)	Greenhouse gas(es)
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
MoV	Means of Verification
MR	Monitoring Report
NA	Not Applicable
OSV	On Site Visit
PD	Project Description
PP(s)	Project Proponent(s)
QA/QC	Quality Assurance /Quality Check
Ref.	Document Reference
SS(s)	Sectoral Scope(s)
TA(s)	Technical Area(s)
VCU	Verified Carbon Unit

VCS	Verified Carbon Standard
VKU	VKU Certification Ltd.
VVS	Validation and Verification Standard
VVB	Validation and Verification Body
SRPC	Southern Regional Power Committee

APPENDIX B: AUDIT FINDINGS

Project Title: 250 MW Wind Power Project by Mytrah Energy

CAR: Corrective Action Request (05)

CL: Clarification Request (04)

FAR: Forward Action Request (00)

Type	Date	26-September-2023
CAR#01	Reference	Section of Ver protocol: Title Page and Section 1
Description of the Non-Conformance		
Title Page: 1. Verification team finds during desk review that the “font size and font style” are inconsistent with the VCS MR template version 4.2 in various sections of the MR. 2. VVB finds during desk review that the monitoring period number is inconsistent with ER sheet. Section 1.4 1. PP must include the complete name of the other entity. 2. During desk review VVB not found the other entity's email address. Section 1.8 1. The statement regarding the project size is inconsistent according to the section 3.10 of VCS standard version 4.4 as Projects are categorized by size into Projects and Large Projects according to their estimated average annual GHG emission reductions or removals. Please clarify. Section 1.7 1. The coordinates of 16 locations out of total 105 locations given in the table do not point out to the WTGs upon checking in google earth software. The WTGs are MAN-321, MAN-328, MAN-311,MAN-379,MAN-297,MAN-299,MAN-194,MAN-126,MAN-136,MAN-491,MAN-492,MAN-488,MAN-493,MAN-355,MAN-500,MAN-501 2. The representative image in the MR does not provide adequate context to verify whether the WTG is indeed in the project location. Also maps do not have north and scale mentioned which is a normative practice when maps are included. The coordinates of 16 WTGs out of 105 WTGs ie., 15% are not showing WTGs for the given coordinates upon checking in google earth. Section 1.11 1. During desk review, assessment team has not found ‘Summary description of project activities implemented during the monitoring period that result in SD contributions (i.e.,		

technologies/measures implemented, activity location)' as per the requirement of section 1.11 of VCS MR template version 4.

Table 1: Sustainable Development Contributions

1. During a desk review, the assessment team did not find any references to the contributions mentioned in the SDG contribution table.
2. PP is not mention about the electricity supplied to grid by the project in the entire project lifetime and similarly the Tonnes of greenhouse gas emissions avoided or removed by the project activity in its lifetime.

1st Response from PP

Date

[28-September-2023](#)

Title Page:

1.The "font size and font style" are made consistent with the VCS MR template version 4.2 in various sections of the revised MR Version 2.0.

2.The monitoring period number of the revised MR Version 2.0 is made consistent with ER sheet.

Section 1.4

- 1.Complete name of the other entity is included in revised MR Version 2.0.
- 2.Other entity's email address is corrected in revised MR Version 2.0.

Section 1.8

1. The project activity meets the eligibility criteria of large-scale project as estimated average annual GHG emission reductions or removals it is greater than 300,000 tonnes of CO₂e per year and this clarification is added in section 1.7 of revised MR Version 2.0

Section 1.7

1. The locations are corrected in revised MR Version 2.0
2. The variation in WTG locations are corrected in revised MR Version 2.0.The variation is applied as deviation in the MR.

Section 1.11

1. Summary description is mentioned in revised MR Version 2.0

Table 1: Sustainable Development Contributions

1. The references to the contributions mentioned in the SDG contribution table details for the electricity supplied to grid by the project in the entire project lifetime and similarly the Tonnes of greenhouse gas emissions avoided or removed by the project activity in its lifetime is provided in revised MR Version .0.

1st Assessment by Audit

Status

[Open](#)

Date

[23-October-2023](#)

Team

Title Page:

1. Verification team confirms that PP has update font size and font style in revised MR according to the VCS MR template version 4.2. Hence accepted
2. Verification team confirms that PP has correct the monitoring period number. Hence accepted

Section 1.4

1. PP has mentioned the other entity full name. Hence accepted.
2. PP has updated the other entity email address in revised MR. Hence accepted.

Section 1.8

1. Verification team verifies and confirms that PP has update the section 1.8 according to VCS standard version 4.4 in revised MR. Hence accepted

Section 1.7

1. Assessment team verifies and confirms that locations are corrected in revised MR Version 2.0. Hence accepted
2. Assessment team verifies and confirms that PP has taken necessary project description deviation as mentioned in Section 3.21of VCS standard version 4.5. Hence, accepted

Section 1.11

1. Assessment team verifies and confirms that PP has not update this section according to the VCS template version 4.2 and please clarify the location of the project "Bagalkot & Koppal District of Karnataka Rajasthan, India.". Open

Table 1: Sustainable Development Contributions

Assessment team verify and confirms that PP has not mention the electricity supplied to grid by the project in the entire project lifetime and similarly the Tonnes of greenhouse gas emissions avoided or removed by the project activity in its lifetime. Open

Hence CAR#01 is Open

2 nd Response from PP	Date	08-November-2023
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Section 1.11

The location has been corrected in revised MR Version 3.0

Table 1

The electricity supplied to grid by the project in the entire project lifetime and similarly the Tonnes of greenhouse gas emissions avoided or removed by the project activity in its lifetime is added in revised MR Version 3.0

2 nd Assessment by Audit Team	Status	Closed	Date	18-November-2023
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1. Section 1.11

- 1.1. Assessment team confirms that locations are corrected in revised MR; Version 3.0. Hence, accepted.

2. Table 1

- 2.1. Assessment team confirms that PP has updated the information as asked and it is found correct in revised MR; Version 3.0. Hence, accepted.

Hence, CAR#01 is Closed.

Type	Date	26-September-2023
CAR#02	Reference	Section of Ver protocol: Section 2, 3, 4 and 5
Description of the Non-Conformance		
Section 2.1 1. PP states that the project activity does not involve any potential negative environmental and socio-economic impacts, but according to VCS Standard V 4.4 section 3.18.2 requires a project to identify the potential negative impact thus, PP is requested to further elaborate on the potential environmental and social impacts of the project. Section 2.2 1. During desk review, assessment team has found that 'the procedures or methods used for engaging local stakeholders (e.g., dates of announcements or meetings, periods during which input was sought) and 'the procedures or methods used for documenting the outcomes of the local stakeholder communication' is not mentioned as per the requirement of section 2.2; VCS MR Template, version 4.2 Section 3.1 1. The technical specification details are inconsistent with registered VCS PD &MR. 2. Further the PP is requested to provide the following details not mentioned in the MR • The voltage generated at the hub is not mentioned. • Additionally, the voltage, current that is generated at the rotor that is transformed and connected to PSS. Is the voltage stepped up further to synchronise with the grid? • Specification of the transformers • Any internal available automatic metering system installed? • Meters installed at PSS if any and its relevance in the overall measurement of energy generation? • Distance (nearest and longest) distance from the WTGs to the substation connected? • How many feeders are present in substation? Are they dedicated feeders? If not, how is the measurement of energy generation done? Any other suitable information. Section 3.2.2 1. PP need to include the information of the monitoring period in which these deviations are approved and included in the monitoring report Section 4.1 1. Please update the font size. 2. PP to clarify out of 3 how many is used as standby as the statement mentioned is incoherent. Also are these the billing meters? OPEN. Section 5.4 1. Please update the font colour as per the MR template.		
1 st Response from PP	Date	26-September-2023

Section 2.1

1. This section is revised as per to VCS Standard V 4.4 section 3.18.2. in revised MR Version 2.0

Section 3.1

1. The technical specification details are made consistent with registered VCS PD &MR.
2. The following details not mentioned in the MR
 - The voltage generated at the hub is 690.0 V.
 - The voltage is generated at 690V at hub and stepped up to 33 kv and then transmitted to Mytrah substation where it is stepped up to 230 KV, further transmitted to GSS (PGCIL) where it is stepped up to 400 KV
 - Transformer specification
 - A) At mytrah pooling substation- Indo tech transformer of capacity 2.6 MVA
 - B) At GSS (PGCIL)- Capacity is 2X 150 MVA and make is Prime Meidem
 - Internally SCADA is installed for automatic monitoring
 - There is no relevance of meters installed at PSS.
 - These details are not required.
 - There is only one feeder at substation which is dedicated substation.

Section 3.2.2

1. The information of the monitoring period in which these deviations are approved and included in the revised MR Version 2.0

Section 4.1

1. Font size is updated.
2. There are 2 meters, one is main meter and other is standby meter a GSS (PGCIL).

Section 5.4

1. Font colour is updated in revised MR Version 2.0

1 st Assessment by Audit Team	Status	Open	Date	23-October-2023
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Section 2.1

1. Assessment team verifies and confirms that PP has not update this section according to VCS Standard V 4.4 section 3.18.2 requires a project to identify the potential negative impact thus, PP is requested to further elaborate on the potential environmental and social impacts of the project. Open

Section 2.2

1. Assessment team Verifies and confirms that PP has update this section according to the VCS MR template version 4.2. Hence accepted

Section 3.1

1. Assessment team could not verify all the technical specifications with the supporting documents provided by PP. Open
2. The technical specifications raised is mentioned below
 - The voltage at the hub of the WTG is mentioned. Accepted.
 - Based on the evidences provided ie., technical specification the transformers the voltage transformation is accepted. CLOSED.
 - Based on the similar evidence as above, the transformer specification is accepted.
 - SCADA monitoring is part of the monitoring redundancy. Hence accepted
 - PP to clarify during emergency situations when the meters at the sub station are damaged due to man made or natural calamities, how is energy generation measurement performed. OPEN
 - The distance information is required in order to assess the transmission losses and consistency of the transmission to sub station throughout the crediting period. OPEN.
 - The explanation towards dedicated feeder at substation for the project activity is accepted. CLOSED

Section 3.2.2

1. Assessment team verifies and confirms that PP has mention monitoring period in which these deviations are approved and included in the revised MR. Hence accepted

Hence CAR#02 is Open

2nd Response from PP

Date

08-November-2023

Section 2.1

In revised MR Version 3.0, the section has been updated update this section according to VCS Standard V 4.4 section 3.18.2

Section 3.1

Required technical specification is submitted herewith.

2nd Assessment by Audit

Status

Closed

Date

18-November-2023

Team

1. Section 2.1

- 1.1. Assessment team confirms that PP has updated the information as required and it is found correct in revised MR Version 3.0. Hence, accepted.

2. Section 3.1

- 2.1. Assessment team confirms that PP has submitted the required technical information and it is found correct in revised MR Version 3.0. Hence, accepted.

Hence, CAR#02 is Closed.

Type

Date

26-September-2023

CAR#03	Reference	Section of Ver protocol: ER Sheet
Description of the Non-Conformance		
The following points of 'ER Calculation Spreadsheet' require corrections: 1. Please present values as per an Internationally recognized standard throughout the ER Sheet. 2. During desk review, assessment team found that units are inconsistent as per international standards. 3. During desk review, assessment team found that the units for the values presented in column G are missing.		
1st Response from PP	Date	28-September-2023
1. Values are presented as per an Internationally recognized standard throughout the ER Sheet. 2. Units are made consistent as per international standards in ER sheet. 3. The values presented in column G are provided in revised ER sheet.		
1st Assessment by Audit Team	Status	Closed
Date 23-October-2023 Assessment team verifies and confirms that ER sheet is updated in appropriate manner. Hence accepted Hence CAR#03 is Closed		

Type	Date	29-November-2023
CAR#04	Reference	Section of Ver protocol: Section 1,3,4 and 5
Description of the Non-Conformance		
Section 1.5 1. PP has not provided the WTG number or details of the first WTG that was interconnected? OPEN Section 1.6 1. Since the lifetime of the WTG is 25 years, PP to clarify how the crediting period will be considered given that renewing twice would result in 30 years period. OPEN Section 1.7 1. The image below ie., google screen grab is illegible. OPEN 2. Check lat and long of WTGs serial no. 96.		

Section 1.11

1. The sentence is not clear. OPEN
2. AS per MR template V 4.2 PP has not provided evidences for SD Contributions as appendices in MR.
3. PP is requested to use dignified terms while referring to employees. OPEN
4. PP is claiming SDG 8 only for this MP? Then please state it accordingly. OPEN

Section 4.2

1. Once? Also please clarify why the paragraph is highlighted in yellow as it is not as per MR guidelines. OPEN

Section 4.3

1. The sentences shows that the project is not yet implemented. Also please clarify the term calculated. OPEN
2. Not consistent with the actual meter specifications checked during the site visit. OPEN
3. PP to provide the basis or procedure behind the calculation of correction factor and how it is conservatively applied. OPEN.

Section 5.4

1. Calculate percentage difference vintage wise.

APPENDIX-

1. Meter type, make, model, specify main and check and standby meters separately.

1st Response from PP

Date

30-December-2023

Section 1.5

1.WTG ID of first WTG connected is mentioned

Section 1.6

5. It is mentioned in registered VCS PD that “crediting period can be renewed twice maximum” which can be up to the project lifetime

Section 1.7

6. The google image is corrected 4.0
7. Geo-coordinates are corrected in revised MR Version 4.0

Section 1.11

8. The sentence is corrected in revised MR Version 4.0
9. The evidence for SDG Contribution is mentioned in appendix in revised MR Version 4.0
10. Dignified term is used for employees in revised MR Version 4.0
11. The description for SDG 8 over project lifetime is mentioned in Revised MR Version 08

Section 4.2

12. Link is given as footnote and paragraph is corrected.

Section 4.3

13. The sentence is corrected now.
14. It is corrected now.

15. The entire sentence is corrected.				
Section 5.4				
16. Vintage-wise percentage difference has been mentioned in the MR; version 4.0				
APPENDIX-				
Meter type, make and model for standby meter and check meter is mentioned now.				
1st Assessment by Audit Team	Status	Closed	Date	01-December-2023
Section 1.5				
1. Assessment team confirms that PP has updated the details of 1 st WTG and it is found correct, hence, accepted.				
Section 1.6				
2. Assessment team confirms that PP has updated the details of crediting period and it is found correct, hence, accepted.				
Section 1.7				
3. Assessment team confirms that PP has inserted the correct image and it is found correct, hence, accepted.				
4. Assessment team confirms that PP has corrected the lat and long for WTGs serial No. 96 and it is found correct, hence, accepted.				
Section 1.11				
5. Assessment team confirms that PP has edited the sentence now and it is found correct, hence, accepted.				
6. Assessment team confirms that PP has provided the evidence for SD Contributions as appendices in MR and it is found correct, hence, accepted.				
7. Assessment team confirms that PP has edited and used the dignified terms now which is found correct, hence, accepted.				
8. Assessment team confirms that PP has updated the details about SDG 8 as appropriate and it is found correct, hence, accepted.				
Section 4.2				
9. Assessment team confirms that PP has updated the link of CEA Regulations as footnote and highlight over the paragraph is removed which is found correct, hence, accepted.				
Section 4.3				
10. Assessment team confirms that PP has edited the entire sentence and it is found correct, hence, accepted.				
11. Assessment team confirms that PP has corrected the accuracy and it is found correct, hence, accepted.				
12. Assessment team confirms that PP has edited the entire sentence and it is found correct, hence, accepted.				
Section 5.4				
13. Assessment team confirms that PP has update the values as asked and it is found correct, hence, accepted.				
Appendix				

14. Assessment team confirms that PP has updated Meter type, make and model for main, check and standby meters separately and it is found correct, hence, accepted.

Hence, CAR#04 is CLOSED.

Type		Date	23-February-2024	
CAR#05		Reference	Section of Ver protocol: Section 01 and section 05 /PRR	
Description of the Non-Conformance				
Section 1.7 1. As per received by VERRA comment “In section 1.7 of the monitoring report and 3.2.2 of the monitoring report (deviation 3), the 105 project locations also referred to turbine label in this MR have changed. The names of the labels are different from the ones in the project description.				
Section 5.4 1. As per received by VERRA comment “ In section 5.4 of the monitoring report the project proponent states that during the 01 April 2022 to 31 December 2022 vintage the actual emission reductions are 1.10% lower as compared to estimated ERs for this vintage, which is inaccurate because they are 1.10 percent higher				
1 st Response from PP		Date	08-March-2024	
Section 1.7 1) In revised MR the correct turbine labels are made consistent with registered VCS PDMR. It is be noted that the registered VCS PD&MR WTGs label and Geo-coordinates of some WTG were mentioned incorrect and same has been applied as deviation 3 during current monitoring period.				
Section 5.4 1) The ex-ante value was mentioned wrong. However, it is corrected in revised MR and hence the actual emission reductions are 8.09 % lower as compared to estimated ERs for this vintage				
1 st Assessment by Audit Team	Status	Closed	Date	27-March-2024
Section 1.7 VVB has confirmed that PP has mentioned the correct turbine label name in the revised MR as per the actual site and has also cross-verified the WTGs label name with the WTGs generation data submitted by PP. Hence, it is accepted.				
Section 5.4				

VVB has check and confirmed that PP has mentioned correct ex-ante value for the current monitoring period in revised MR and actual emission reductions are 8.09 % lower as compared to estimated ERs for this vintage. Hence, it is accepted.

Hence, CAR#05 is Closed.

Type	Date	26-September-2023
CL#01	Reference	Section of Ver protocol: Section 1, 2, 3 and 4
Description of the Non-Conformance		
The following evidences need to be submitted by PP: Section 1.1 1. PP submit the breakdown details for the current monitoring period an also mention the monitoring report. Section 1.9 1. PP to provide evidence to confirm this statement about not participating in any other GHG program Section 1.10 1. PP to provide evidence to confirm this statement. Table 1: Sustainable Development Contributions 1. PP submit the employment generation records for the current monitoring period. Section 2.1 1. PP submit CSR activity certificate for the current monitoring period. 2. PP needs to provide grievance register photograph kept at plant site. Section 3.1 1. PP needs to submit the O&M agreement 2. PP needs to submit the technical specification details for the current monitoring period. Section 3.22 1. Please provide evidence for the transfer of Feeder 223 to M/S Orange Power. Section 4.2 1. PP submit the evidence for deviation settlement account statement issued by SRPC Section 4.3 1. PP needs to be submitted the evidence for personal training records for plant helpers are trained in (equipment operation, data recording, reports writing etc). Section 5.4		

- 1) The Emission Reduction table in this section has computation errors vintage wise.
- 2) PP is requested to justify the lower ER than estimated from the registered PD with respect to PLF achieved vs estimated and the percentage breakdown hours.

1st Response from PP
Date
28-September-2023

The following evidences need to be submitted by PP:

Section 1.1

1. Breakdown details for the current monitoring period is mentioned in the revised MR Version 2.0.

Section 1.9

1. No double counting declaration is submitted herewith.

Section 1.10

1. No double counting declaration is submitted herewith

Table 1: Sustainable Development Contributions

1. Attendance record for current monitoring period is submitted herewith.

Section 2.1

1. No CSR activity conducting during the current monitoring period.
2. Grievance register is submitted herewith.

Section 3.1

1. O&M agreement is submitted herewith.
2. Technical specification is submitted herewith.

Section 3.22

1. This is not required as the deviation is already approved during previous verification period

Section 4.2

1. Deviation settlement account statement issued by SRPC are submitted herewith.

Section 4.3

1. Training records are submitted herewith

Section 5.4

- 1) In the revised MR Version 2.0 table is revised.
- 2) During the current monitoring period, the plant underwent some minor breakdowns (details given in annexure 2) which is 3.78% of operating hours of 105 WTGs. The generation is

also less due to variation in climate conditions such as wind pattern and flow rate throughout the year which are beyond the control of the Project Proponent. Hence the actual emission reductions are 9.51% lower as compared to the estimated emission reductions. The PLF achieved during current monitoring period is 20.92% whereas the registered PLF is 33.11% which is within the sensitivity range of 10%.

1st Assessment by Audit Team	Status	Open	Date	23-October-2023
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The following evidences submitted by PP:

1. Breakdown details. (Section 1.1)
2. No double counting declaration certificate. (Section 1.9)
3. employment generation records (Section 1.10) Hence accepted

Section 2.1

1. Assessment team verifies and confirms that PP has update the statement in revised MR. hence accepted.
2. Assessment team could not find the grievance register in the documents submitted by the PP. Open

Section 3.1

1. Assessment team confirms that PP has provide the O&M agreement. Hence accepted
2. Assessment team could not verify all the technical specifications with the supporting documents provided by PP. Open

Section 3.22

1. Assessment team verifies and confirms that deviation 2 under permanent deviation and verified during previous verification. Hence accepted

Section 4.2

1. Assessment team confirms that PP has provided deviation settlement account statement issued by SRPC. Hence accepted

Section 4.3

1. PP has submitted the training record. Hence accepted
2. Assessment team verifies and confirms that PP has mention the archived and estimated ER value and, the PLF achieved during current monitoring period in revised MR. Hence accepted.

Hence CL#01 is Open

2nd Response from PP	Date	08-November-2023
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Section 2.1

Grievance record is submitted herewith

Section 3.1

Required technical records is submitted herewith.

2nd Assessment by Audit Team	Status	Closed	Date	18-November-2023
Section 2.1 Assessment team confirms that PP has submitted the grievance record and the mentioned information in the MR; Version 3.0 is found correct as per the grievance record. Hence, accepted. Section 3.1 Assessment team confirms that PP has submitted the technical specifications and the mentioned information in the MR; Version 3.0 is found correct as per the technical specifications. Hence, accepted. Hence, CL#01 is Closed.				

Type	Date	26-September-2023
CL#02	Reference	Section of Ver protocol: Section 1
Description of the Non-Conformance		
Section 1.1 1. Total 105 WTGs of 2.4 MW each has been installed by PP which amounts to 252 MW capacity while throughout the MR only 250 MW is mentioned as total capacity of this project activity. Please clarify. 2. Since each WTGs installed by PP under this project activity are of 2.4 MW capacity, please clarify how the capacity of 128.79 MW and 62.89 MW has been achieved. 3. The audit history table mentioned in this section has computation error and the monitoring period dates used are not consistent. Section 1.8 4. This statement is inconsistent according to the section 3.10 of VCS standard version 4.4 as Projects are categorized by size into Projects and Large Projects according to their estimated average annual GHG emission reductions or removals. Please clarify.		
1stResponse from PP	Date	28-September-2023
Section 1.1 1. Not Applicable. 2. The details are corrected in revised MR Version 2.0. 3. Computational error in Table 1 are corrected in revised MR Version 2.0.		

Section 1.8

4. This statement is corrected in section 3.10 of VCS standard version in revised MR Version 2.0

1stAssessment by Audit Team	Status	Open	Date	30-October-2023
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Section 1.1

1. Total 105 WTGs of 2.4 MW each has been installed by PP which amounts to 252 MW capacity while throughout the MR only 250 MW is mentioned as total capacity of this project activity. Please clarify. Open
2. One of the three capacity still do not match with the Commissioning certificate submitted by PP. Open
3. Assessment team confirms that PP has update the audit history table. Hence accepted

Section 1.8

1. Verification team verifies and confirms that PP has update the section 1.8 according to VCS standard version 4.4 in revised MR. Hence accepted

Hence CL#02 is Open

2nd Response from PP	Date	08-November-2023
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Section 1.1

1. The total capacity of the project is 250 MW as per the PPA which is submitted herewith.
2. The total capacity for 63.18 with calculating 26 WTG of 2.43 MW (mentioned in CC) is 63.18 Which is calculated wrong in CC

2nd Assessment by Audit Team	Status	Closed	Date	18-November-2023
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Section 1.1

Assessment team confirms that the mentioned capacity 250 MW is found correct as per the PPA (Power Purchase Agreement). Hence, accepted.

Assessment team confirms that the mentioned capacity 63.18 MW is found correct as per the CC (Commissioning Certificate). Hence, accepted.

Hence, CL#02 is Closed.

Type	Date	09-August-2023
CL#03	Reference	Section of Ver protocol: Section 3 and 4

Description of the Non-Conformance				
Section 3.2.2 1. Please clarify whether the net value includes the deviation from the forecasted value or not.				
Section 4.3 1. PP is requested to clarify how CDM team is applicable in the VCS project mentioned in flow chart, under the section 4.3. 2. PP is needs to clarify regarding the monitoring mechanism available at site, which will ensure continuous monitoring of energy generation, during non-operation of both the meters.				
1 st Response from PP			Date	28-September-2023
Section 3.2.2 The monitoring of net electricity supplied to grid by the PA is based on Settlement Mechanism (DSM).The generation values are sourced from REA. In DSM, PP provides forecasted energy generation (scheduled) in advance to the Sothern Regional Power Committee and invoicing are being done based on forecasted energy generation. Any deviation from forecasted generation is penalised which depends on magnitude of deviation. However, PP has used actual value for calculating emission reductions. The net value does not in include forecasted value.				
Section 4.3 1. In revised MR Version 2.0 the VCS project mentioned in flow chart, under the section 4.3 is corrected. 2. In revised MR Version 2.0 the details for monitoring mechanism available at site, which will ensure continuous monitoring of energy generation, during non-operation of both the meters is added				
1 st Assessment by Audit Team	Status	Closed	Date	30-October-2023
Section 3.2.2 1. The explanation for the point 3 is accepted as net electricity supplied to grid through DSM is not conservative and is not representative of the energy supplied to grid. Hence accepted.				
Section 4.3 1. Assessment team verifies and confirms that PP has update flowchart according to the VCS project. Hence accepted 2. Assessment team verifies and confirms that PP has mention monitoring mechanism available at site, which will ensure continuous monitoring of energy generation, during non-operation of both the meters in revised MR. Hence accepted				
Hence CL#03 is Closed				

Type		Date	09-August-2023	
CL#04		Reference	Section of Ver protocol: ER Sheet	
Description of the Non-Conformance				
The following points in the ‘ER Calculation Spreadsheet’ require evidences and clarifications:				
1. Please provide JMR, Invoices and other all supporting documents for the months of April 2022, May 2022, June 2022, July 2022, August 2022, September 2022, October 2022 and February 2023 as these documents are not found in the supporting documents provided by PP 2. Please provide the reference documents of the values presented in column D, E and F 3. Please clarify the difference found in the values presented throughout the column H with respect to the column F				
1 st Response from PP		Date	28-September-2023	
1. JMR and Invoices are submitted herewith 2. The reference document is Regional Energy Account document and is submitted herewith 3. The monitoring of net electricity supplied to grid by the PA is based on Settlement Mechanism (DSM). The generation values are sourced from REA. In DSM, PP provides forecasted energy generation (scheduled) in advance to the Sothern Regional Power Committee and invoicing are being done based on forecasted energy generation. Any deviation from forecasted generation is penalised which depends on magnitude of deviation. However, PP has used actual value for calculating emission reductions				
1 st Assessment by Audit Team	Status	Open	Date	23-October-2023
2. PP has not provided JMRS and Invoices in supporting documents. Open 3. PP has provided the regional energy account document. Hence accepted 4. The explanation for the point 3 is accepted as net electricity supplied to grid through DSM is not conservative and representative of the energy supplied to grid. Hence accepted. Hence CL#04 is Open				
2 nd Response from PP		Date	08-November-2023	
Section 2.1				
In revised MR Version 3.0, the section has been updated according to VCS Standard V 4.4 section 3.18.2				
2 nd Assessment by Audit Team	Status	Closed	Date	18-November-2023

1. Section 2.1

1.1. Assessment team confirms that the required information is now mentioned in the MR; version 3.0 and is found correct as per VCS standard; version 4.4. Hence, accepted.

Hence, CL#04 is Closed.

Type	Date	DD/MM/YYYY		
FAR	Reference			
Description of the Non-Conformance				
1 st Response from PP		Date	DD/MM/YYYY	
1 st Assessment by Audit Team	Status	Open/Closed	Date	DD/MM/YYYY

APPENDIX C: COMPETENCE STATEMENT

Team Leader and Sectoral Expert 1.2



Certification Pvt. Ltd.

VKU.F50W. Competence Statement

COMPETENCE STATEMENT

Name	Sanjay Kumar K
Nationality	Indian
Countries of Experience	India
Education Qualification	B.E. (Civil Engineering) M. Tech (Environmental Engineering)
Year of Experience	20 Years +
Area of Expertise	Climate Change & Environment Sustainable Development GHG Footprints
Eligible Sectoral Scope	TA 1.2 - Renewables TA 3.1 - Energy Demand TA 6.1 - Construction

Roles

Project Trainee	NO
Validator/Verifier Trainee	NO
Validator	YES
Verifier	YES
Team Leader	YES
Technical Reviewer	YES
Local Expert (Country Wise)	YES
TA Expert (1.2, 3.1, 6.1)	YES
Financial Expert	YES

Reviewed by	Vandana Gupta (Quality Manager)	Date	03.03.2023
Approved by	Vivek Kumar Ahirwar (Technical Manager)	Date	03.03.2023

Validator/Verifier - Trainee



Certification Pvt. Ltd.

VKU.F50W. Competence Statement

COMPETENCE STATEMENT

Name	Apoorva Tripathi
Nationality	Indian
Countries of Experience	India
Education Qualification	B.Sc. (BCZ) M.Sc. (Environmental Science)
Year of Experience	8 Months as Project Trainee
Area of Expertise	Climate Change & Environment
Eligible Sectoral Scope	NA

Roles

Project Trainee	NO
Validator/Verifier Trainee	YES
Validator	NO
Verifier	NO
Team Leader	NO
Technical Reviewer	NO
Local Expert (Country Wise)	NO
TA Expert (X.X)	NO
Financial Expert	NO

Reviewed by	Vandana Gupta (Quality Manager)	Date	04/04/2023
Approved by	Vivek Kumar Ahirwar (Technical Manager)	Date	04/04/2023

Project-Trainee



Certification Pvt. Ltd.

VKU.F50W. Competence Statement

COMPETENCE STATEMENT

Name	Anand Kumar
Nationality	Indian
Countries of Experience	India
Education Qualification	M.Sc. (Environmental Science) B.Sc. (Chemistry Hons.)
Year of Experience	Fresher (Done 3 months Internship in VKU)
Area of Expertise	NA
Eligible Sectoral Scope	NA

Roles

Project Trainee	YES
Validator/Verifier Trainee	NO
Validator	NO
Verifier	NO
Team Leader	NO
Technical Reviewer	NO
Local Expert (Country Wise)	NO
TA Expert (X.X)	NO
Financial Expert	NO

Reviewed by	Vandana Gupta (Quality Manager)	Date	31/03/2023
Approved by	Vivek Kumar Ahirwar (Technical Manager)	Date	31/03/2023

Technical Reviewer and Sectoral Expert 3.1



Certification Pvt. Ltd.

VKU.F50W. Competence Statement

COMPETENCE STATEMENT

Name	Vivek Kumar Ahirwar
Nationality	Indian
Countries of Experience	India, Madagascar, Thailand, Indonesia, Bangladesh, Nepal, Ghana, Uganda, Kenya etc
Education Qualification	B.E. (Mechanical Engineering) M. Tech (Energy Management)
Year of Experience	12 Years +
Area of Expertise	Climate Change & Environment
Eligible Sectoral Scope	TA 1.1 - Thermal energy generation TA 1.2 - Renewables TA 2.1 - Energy Distribution TA 3.1 - Energy Demand

Roles

Project Trainee	NO
Validator/Verifier Trainee	NO
Validator	YES
Verifier	YES
Team Leader	YES
Technical Reviewer	YES
Local Expert (Country Wise)	YES
TA Expert (1.1, 1.2, 2.1, 3.1)	YES
Financial Expert	YES

Reviewed by	Vandana Gupta (Quality Manager)	Date	28/02/2023
Approved by	Dr. Vikas Kumar Aharwal (Director)	Date	04/03/2023