WIND BASED POWER GENERATION BY MYTRAH ENERGY (INDIA) LIMITED (EKIESL- VCS-JANUARY-16-01)

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Summary:

VKU Certification Pvt. Ltd. (hereafter referred as VKU) was commissioned by Infinite Solutions Limited (hereafter referred as Infinite Solutions) has verified the greenhouse gas emission reductions which are reported for the project activity "**Wind-Based Power Generation by Mytrah Energy (India) Limited (EKIESL-VCS-January-16-01**)" (**VCS ID 1521**)[1] in India. This is the eighth verification that covers the monitoring period from **01-April-2022 to 30-June-2023 (Inclusive of both dates)** under the first crediting period i.e., from **21-February-2014 to 20-February-2024 (Inclusive of both dates).**

The purpose of the verification: The objective of the verification process is to obtain an impartial evaluation of the ex-post determination of the monitored reductions in greenhouse gas (GHG) emission. This verification ensures that the monitoring methodology aligns with the plan outlined in the registered VCS PD /3/, and that the monitoring data used to confirm reductions in human-caused emissions from sources is comprehensive, definitive, and transparently presented.

The verification scope of the project is:

- To verify that the project is implemented as described in the registered VCS PD /3/.
- To evaluate the project's adherence to relevant regulations, including the legislation of the host country (India)
- To verify the implementation and functionality of the monitoring system, ensuring the generation of Verified Carbon Units without any instances of double counting.
- To verify the accuracy, completeness, consistency, transparency, and absence of significant errors or omissions in the reported data by examining monitoring records and emissions reduction calculations.
- To ensure that the actual monitoring systems and procedures align with those described in the monitoring plan.
- To assess the GHG emission reduction data and provide a conclusion with a reasonable level of assurance regarding the absence of material misstatements.
- To verify that reported GHG emission data is sufficiently supported by evidence.

Verification was conducted using VKU's procedures in line with the requirements specified in the VCS Program Guide version 4.4/8/, VCS Standard Version 4.5/10/, VCS Validation and Verification Manual version 3.2/11/, CDM M&P, the latest version of the CDM Validation and Verification Standard 3.0/12/, and relevant decisions of the COP/MOP and the CDM EB viz., the requirements of Article 12 of the Kyoto Protocol, the CDM Modalities and Procedures as agreed in the Marrakech Accords under decision 3/CMP.1, the annexes to this decision, subsequent decisions and guidance made by COP/MOP & CDM Executive Board, and other relevant rules, including the Host Country (India) legislation. Furthermore, standard auditing techniques were applied throughout the verification process.

The verification process included inter alia a desk review, remote site assessment, the resolution of

[1] https://registry.verra.org/app/projectDetail/VCS/1521

outstanding issues and the issuance of the final verification report and certification. This comprehensive verification is aimed to ensure that the reported emission reductions are thorough and precise, aligning with the relevant VCS requirements, thus enabling the project to obtain certification.

VKU diligently followed the rule-based approach during the verification process, ensuring strict adherence to the applicable VCS requirements. The verification encompassed a comprehensive assessment of the project activity's operations, monitoring procedures, and GHG emission reduction calculations.

During this eighth verification of first Crediting Period, it is noted that as a result, a total of **(05)** findings were identified, comprising **(03) Corrective Action Request (CARs); (02) Clarification Requests (CLs) and (00) Forward Action Requests (FAR).** All the raised findings were successfully resolved/closed after necessary corrections/clarifications by the client. 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 by verifying 100% of the data with the supporting documents and evidence made available to the assessment team by the PP, This was performed during desk review and also during site visits by conducting personnel interviews and focussed group discussions remotely along with verification of data present at site in accordance with applicable VCS requirements to be certified therefore the assessment team has detected no further uncertainties.

The GHG emission reductions were calculated based on the approved methodology ACM0002: Grid-connected electricity generation from renewable sources - Version 16.0 /13/ and Tool to calculate the emission factor for an electricity system; Version 05.0 /20/ and the monitoring plan included in the registered VCS PD (version 02) dated 10-February-2016/3/

Verification Conclusion:

Based on VKU's thorough assessment, it is their professional judgment that the project activity “Wind Based Power Generation by Mytrah Energy (India) Limited (EKIESL-VCS-January-16-01)” (VCS ID 1521) fully complies with the applicable requirements of VCS standard version 4.5 /10/ and associated guidelines. The project has successfully implemented the designated baseline and monitoring methodology outlined in ACM0002: Grid-connected electricity generation from renewable sources- Version 16.0/13/.

The monitoring system in place is effective and reliable, ensuring a reasonable level of measurement and precision level allowed by the methodology and the VCS standards without any significant discrepancies. As a result, VKU is able to objectively state that the project has achieved an emission reduction of **369,034 tCO_2e** during the eighth verification of first crediting period (21-February-2014 to 20-February-2024; Including both dates) which spans from **01-April-2022 to 30-June-2023 (Inclusive of both start and end dates)**. This certification affirms the project's substantial contributions towards mitigating greenhouse gas emissions.

CONTENTS

1 INTRODUCTION

1.1 Objective

Infinite Solutions Limited (here after referred as Infinite Solutions) commissioned VKU Certification (here after referred as VKU) to carry out eighth verification of the project "Wind Based Power Generation by Mytrah Energy (India) Limited (EKIESL-VCS-January-16-01)" (VCS ID 1521) in India for the period from 01-April-2022 to 30-June-2023 (Inclusive of both start and end dates) under first crediting period i.e., from 21-February-2014 to 20-February-2024 (Inclusive of both dates).

The objective of the verification is to have an independent evaluation of a project activity by an accredited validation and verification body against the requirements of the VCS Program Guide Version 4.4 /8/, VCS standard version 4.5 /10/ and GHG program applied, on the basis of the registered VCS PD Version 02 dated 10-February-2016/3/.

This is the eighth periodic verification of first crediting period (21-February-2014 to 20-February-2024; Inclusive of both dates) for a period of 1 Year 3 months or 456 days i.e., from 01-April-2022 to 30-June-2023 (Inclusive of both start and end dates). The project activity adopts renewable crediting period of 10 years which can be renewed twice as mentioned in section 1.6 of VCS PD Version 02 dated 10-February-2016/3/.

Table No 01: Number and time period of Verification under first crediting period:

First Crediting Period Audit Trail			
Audit Type	**GHG Programme**	**Monitoring Period (Inclusive of both dates)**	**Number of years**
1st Verification	VCS	21-February-2014 to 1-April-2016	02 Years, 01 Month, 12 Days
2nd Verification	VCS	02-April-2016 to 01-May-2018	02 Years, 01 Month, 00 Days
3rd Verification	VCS	02-May-2018 to 01-August 2019	01 Year, 03 months, 00 Days
4th Verification	VCS	02-August-2019 to 31-March-2020	00 Year, 07 Months, 30 Days
5th Verification	VCS	01-April -2020 to 31-May-2021	01 Year, 02 Months, 00 Days
6th Verification	VCS	01-June-2021 to 28-February-2022	00 Year, 09 Months, 00 Days
7th Verification	VCS	01-March-2022 to 31-March-2022b	00 Year, 01 Month, 00 Days

8th Verification (Current Monitoring Period)	VCS	01-April-2022 to 30-June-2023 (Current Monitoring Period)	01 Year, 03 months, 00 Days
Total	VCS	**21-February-2014 to 30-June-2023**	**09 Years, 04 Months, 10 Days**

The verification will be performed by review of evidences & documents submitted to the VKU Assessment/Verification Team by PP, for the registered project activity to establish that:

- The project activity has been implemented and operated in strict adherence to the registered VCS PD Version 02 dated 10-February-2016/3/ & MR /1/ and that all physical features (technology employed, technical specifications of the WTGs, project equipment's, metering and monitoring protocols) of the project are in place.
- The monitoring report/1/ and accompanying documentation have been meticulously compiled and are comprehensive in nature.
- The data has been methodically recorded and stored in accordance with the prescribed monitoring methodology outlined in "ACM0002: Grid-connected electricity generation from renewable sources - version 16.0 /13/ and approved monitoring plan.

The verification process aimed to confirm the seamless implementation and full functionality of the monitoring system, ensuring the accurate generation of Verified Carbon Units (VCUs) without any instances of double counting/30/. Additionally, meticulous scrutiny of the monitoring records and emissions reduction calculations has been carried out to guarantee the completeness, consistency, transparency and absence of any material errors or omissions in the reported data. This aims to establish the reliability and integrity of the data.

1.2 Scope and Criteria

The scope of this verification was the independent, objective review and ex-post determination of the monitored reductions in GHG emissions from the "Wind Based Power Generation by Mytrah Energy (India) Limited (EKIESL-VCS-January-16-01)". The verification of this project was based on the validated & registered VCS PD Version 02 dated 10-February-2016/3/ & monitoring report/1/ along with supporting documents submitted by the project proponent to the VKU verification team. The documents thus submitted to the VKU Assessment/Verification Team were reviewed against the following guidance & protocols:

i) VCS Programme Guide (Version 4.4) /8/
ii) VCS Standard (Version 4.5) /10/
iii) VCS Program Definitions (Version 4.4) /6/
iv) VCS Registration & Issuance Process (Version 4.4) /7/
v) VCS validation and verification manual (Version 3.2) /11/
vi) CDM Approved methodology ACM0002 (Version 16.0) /13/
vii) Tool to calculate the emission factor for an electricity system (Version 05.0)/20/
viii) Tool for the demonstration and assessment of additionality, (Version 07.0.0) /21/

ix) CDM Validation and Verification Standard version 3.0/11/

The steps involved are as follows:

- To assess the project's compliance with other relevant rules including the host country (India) legislation.
- To confirm that the monitoring system is implemented and fully functional to generate voluntary emission reductions without any double counting
- 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 is sufficiently supported by evidence.
- The verification process ensures that the reported emission reductions are comprehensive and accurate in order to obtain certification.

The verification method and criteria encompassed several phases, including

(i) Desk review of VCS Project Description, registered under (Version 02) dated 10-February-2016/3/ and other supporting documents listed in **Table-04;**
(ii) Interviews & Focussed Group Discussions with Stakeholders & PP representatives involved in project's implementation.
(iii) VKU's Completeness/Quality Check, and
(iv) The Final issuance of the verification report.

Outstanding issues were resolved, leading to the issuance of the final verification report and the relevant VCS Verification Deed of Representation.

It is important to note that the verification process does not involve in providing consultancy to the project proponents. However, requests for clarifications and corrective actions may have contributed to improvements in the monitoring process.

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, 4.1.10 and Serial no. 6 of clause 4.1.24 of the VCS Standard version 4.5/10/.

The verification report is based on the Monitoring report/1/, registered VCS PD Version 02 dated 10-February-2016/3/ & supporting documents that were made available to the VKU's assessment team references provided in Table-04 and information collected through performing interviews with PP Representatives/Local Stakeholders during remote site visit /38/

The technical review was performed by a technical reviewer(s) qualified in accordance with VKU's qualification procedure. The assessment team and the technical reviewers consist of the following personnel.

Table No 02: The Assessment Team comprises of

Role/Qualification of Assessment Team	Last Name	Middle Name	First Name
VCS Team Leader, Technical Expert TA 1.2, (Local Expert – Country: India)	K	Kumar	Sanjay
Validator/Verifier - Trainee	Dhankar	NA	Anil
Project Trainee	Modi	NA	Priyanshee

Table No 03: The Technical Reviewer Team comprises of:

Role/Qualification of Technical Team	Last Name	Middle Name	First Name
Technical Reviewer & Technical Expert TA 1.2	Ahirwar	Kumar	Vivek

1.4 Summary Description of the Project

Project Overview:

The project activity is a new facility and involves a wind-based power generation project. The project activity involves installation of 233.1 $MW_{(AC)}$ wind project in in different states of India. The primary objective of this undertaking is to generate clean electricity from renewable wind energy sources. The Project activity consists of total 223 Wind Turbine Generators (WTGs) with

capacities of 0.85 MW & 1.5 MW located at three different sites (Savalsung, Vagrai & Burgula) in three different states (Karnataka, Tamil Nadu & Andhra Pradesh) of India.

Savalsung Project Site: -

Savalsung project site involved installation and operation of 95.2 MW consisting of 112 WTGs of rated capacity 0.85 MW each in different villages of district Bijapur in state Karnataka by Mytrah Vayu Krishna Private Limited. Siemens Gamesa Renewable Power Private Limited is the O & M entity for this project site and responsible for the operations, maintenance and recording of data.

Vagrai Project Site: -

Vagrai project site involved installation and operation of 100.5 MW consisting of 67 WTGs of rated capacity 1.5 MW each in different villages of districts Tirupur and Dindigul in state Tamil Nadu by Mytrah Vayu (Manjira) Private Limited. Regen Powertech Private Limited is the O & M entity for this project site and responsible for the operations, maintenance and recording of data.

Burgula Project Site: -

Burgula project site involved installation and operation of 37.4 MW consisting of 44 WTGs of rated capacity 0.85 MW each in village Burgula of district Kurnool in state Karnataka by Mytrah Vayu Krishna Private Limited. Suzlon Global services Pvt ltd is the O & M entity for this project site and responsible for the operations, maintenance and recording of data.

Mytrah Vayu Krishna Private Limited and Mytrah Vayu (Manjira) Private Limited are the subsidiary companies of Mytrah Energy (India) Limited, which is also the project proponent in the project activity.

Start date of the project activity is the earliest date of interconnection with the grid i.e., 21-February-2014. This is the date of commissioning of 26 WTGs of this Project activity by Mytrah Vayu Krishna Private Limited and the project was fully commissioned on date of commissioning of last machine (223rd WTG) i.e., 26-February-2015. The entire project is in continuous operation since its date of commissioning. The details of commissioning dates of the individual project activity are mentioned in the section 4.1 of this report.

Energy Source:

This project activity utilizes wind energy to generate electricity through its 223 WTGs (Total capacity of 233.1 MW_{AC}). The generated electricity from Savalsung & Burgula site is seamlessly integrated into the Unified Indian Grid (Previously Southern Grid). Notably, this generation of energy abstains from utilizing fossil fuels, ensuring absence of greenhouse gas emissions and the generated electricity from Vagrai site is seamlessly integrated into the Unified Indian Grid (Previously Southern Grid) and used for captive consumption. Notably, this generation of energy abstains from Unified Indian Grid (Previously Southern Grid)., ensuring absence of greenhouse gas emissions Consequently, this project contributes positively to environment by producing sustainable power without adverse ecological effects.

Project Nature:

The project is categorized as a Greenfield facility, signifying its new and innovative character. The generated electricity from Savalsung & Burgula site is seamlessly integrated into the Unified Indian Grid (Previously Southern Grid). Notably, this generation of energy abstains from utilizing fossil fuels, ensuring absence of greenhouse gas emissions and the generated electricity from Vagrai site is seamlessly integrated into the Unified Indian Grid (Previously Southern Grid) and used for captive consumption. Notably, this generation of energy abstains from Unified Indian Grid (Previously Southern Grid), ensuring absence of greenhouse gas emissions Consequently, this project contributes positively to environment by producing sustainable power without adverse ecological effects. The Project Proponent thus plans to avail (VCS) benefits for this initiative. These benefits encompass recognized credits for the reduction of greenhouse gas emissions, underscoring the project's commitment to environmental sustainability.

By implementing the project activity, the following GHG sources of emissions are reduced/avoided:

Baseline/Source	Generation of electricity by fossil fuel- dominated grid connected power plants
Project Equipment/Sink	Avoidance of GHG emission into the atmosphere is due to generation of electricity by renewable means i.e., Wind Turbine Generators (WTGs) of this project and exporting to Unified Indian Grid which is in line with 3.1.1 of ISO:14064 part -2 Renewable Energy Projects do not create sinks, they avoid emissions through their technology i.e., Through installed Wind Power Project.
Baseline GHG emission source reduced/avoided	CO_2 emissions from fossil fuels and other fuel fired grid connected plants/projects.

The entire project is in continuous operation since its date of commissioning of the respective machines, as witnessed by the assessment team during remote site visit, & which was verified against the registered VCS PD/3/ previous Verification report /5/ and commissioning certificates/31/. Above documents have been submitted by PP in response to the feedback raised as a CL#02. As per section 3.26 and clause 3.26.3 of the VCS Standard version 4.5/10/ 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 4.5/10/ conforms that the capacity of the project by verifying it during the remote site visit assessment by cross checking the commissioning certificates/31/name plates of WTGs installed at site & while interviewing the site personnels and hence declare that the project capacity is in line with the defined methodology ACM0002 version 16.0 & Project Description version 02 dated 10-February-2016/3/.

The net electricity generated by the project activity that was evacuated to the grid during the current monitoring period (8th monitoring period) from 01-April-2022 to 30-June-2023 (inclusive of both dates) is **375,917.3 MWh**. The total emission reductions achieved in this monitoring period i.e., from 01-April-2022 to 30-June-2023 (Inclusive of both start and end dates) is **369,034 tCO_2e**.

2 VERIFICATION PROCESS

The registered VCS project "Wind Based Power Generation by Mytrah Energy (India) Limited (EKIESL-VCS-January-16-01)" (VCS ID 1521) is undergoing eighth periodic verification of first crediting period under VCS with VKU Certification Pvt Ltd from 01-April-2022 to 30-June-2023, both dates included. The first crediting period start from 21-February-2014 to 20-February-2024 (both dates included).

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 /8/, VCS standard document version 4.5 /10/. The project activity does not fall under category "grouped projects", hence no acceptance sampling methods was employed by the assessment team and during remote site visit assessment/38/verification team reviewed 100% data for all the Wind Turbine Generators involved in this project at site for the verification of GHG emission reductions generated by the project.

- The GHG emission reductions are based on the approved Baseline and monitoring methodology ACM0002 "Grid-connected electricity generation from renewable sources" Version 16.0 /13/
- Scope: 01 - Energy Industries (renewable /non-renewable sources)
- Project type: Type I - Renewable energy projects
- This is not a grouped and also a non-AFOLU project.

Tools used for GHG Calculations are as follows as per registered PD /3/:

- Tool to calculate the emission factor for an electricity system, Version 05.0 /20/

Keeping in line with ISO (14064-3; 2019, clause 06 & 14065-2020, clause 09) Standard guidelines assessment team has framed down the process for completing the verification and has followed the same throughout the execution of audit of the said project VCS 1521.

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 remote site visit at all the plant sites /38/verification team reviewed 100% data for all the Wind Turbine Generators involved in this project at site for the verification of GHG emission reductions or removals generated by the project

However, in order to conduct remote site visit in a such a way that the efforts and time is optimised, and the number of samples are 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)/ 47/ which states that.

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 across several states and districts within the state, 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 end 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/47/.

Accordingly, the verification team then applied the equation (1) as per para 12 of the guidelines as follows in order to determine the required sample size

The equation to give us the required sample size is:

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

Where

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 i.e., 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 /34/ 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:
  (Total operational hours in the duration/MP – breakdown hours in the duration) x 100 / 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 (to pick representative samples) 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 i.e., 95/5 is applied then n reduces to 36 nos.

Project site is implemented at 3 sites in 3 states (Karnataka, AP, Tamil Nadu), therefore, remote audit was conducted.

The percentage breakdown details for the Savalsang Site in Karnataka is as mentioned below:

Sl No	WTG No	Total WTG Down Hrs.	% breakdown hours
1	SVG197	3992.52	36.48%
2	SVG52	1324.28	12.10%
3	SVG53	694.45	6.35%
4	SVG119	693.05	6.33%
5	SVG106	691.33	6.32%
6	SVG180	593.60	5.42%
7	SVG15	586.28	5.36%
8	SVG128	558.67	5.10%
9	SVG157	547.40	5.00%
10	SVG35	537.52	4.91%
11	SVG96	486.58	4.45%
12	SVG62	453.70	4.15%
13	SVG50	314.18	2.87%
14	SVG179	303.40	2.77%
15	SVG109	302.63	2.77%
16	SVG51	287.33	2.63%
17	SVG26	264.65	2.42%
18	SVG66	262.43	2.40%
19	SVG107	231.22	2.11%
20	SVG18	230.55	2.11%
21	SVG22	219.45	2.01%
22	SVG134	200.07	1.83%
23	SVG94	167.22	1.53%
24	SVG48	139.45	1.27%
25	SVG174	133.43	1.22%
26	SVG153	116.43	1.06%
27	SVG195	101.63	0.93%
28	SVG193	98.45	0.90%
29	SVG125	85.07	0.78%
30	SVG175	84.72	0.77%
31	SVG137	82.00	0.75%
32	SVG16	81.45	0.74%
33	SVG64	81.32	0.74%
34	SVG196	78.87	0.72%
35	SVG144	78.75	0.72%

36	SVG97	77.48	0.71%
37	SVG126	77.07	0.70%
38	SVG194	76.90	0.70%
39	SVG129	76.23	0.70%
40	SVG28	73.83	0.67%
41	SVG172	71.47	0.65%
42	SVG168	71.33	0.65%
43	SVG111	71.25	0.65%
44	SVG43	70.97	0.65%
45	SVG76	70.43	0.64%
46	SVG60	69.42	0.63%
47	SVG143	67.82	0.62%
48	SVG145	67.57	0.62%
49	SVG88	67.52	0.62%
50	SVG165	66.65	0.61%
51	SVG123	66.37	0.61%
52	SVG40	65.53	0.60%
53	SVG155	65.32	0.60%
54	SVG74	64.58	0.59%
55	SVG141	64.55	0.59%
56	SVG139	63.63	0.58%
57	F-4	63.35	0.58%
58	SVG105	62.82	0.57%
59	SVG75	62.45	0.57%
60	SVG103	61.47	0.56%
61	SVG173	59.52	0.54%
62	SVG176	59.17	0.54%
63	SVG148	58.88	0.54%
64	SVG54	58.37	0.53%
65	SVG178	57.55	0.53%
66	SVG177	57.50	0.53%
67	SVG147	57.38	0.52%
68	F-3	57.32	0.52%
69	SVG166	56.92	0.52%
70	SVG25	55.97	0.51%
71	SVG101	55.08	0.50%
72	F-2	55.00	0.50%
73	SVG136	54.97	0.50%
74	SVG37	53.98	0.49%
75	SVG140	53.98	0.49%

76	SVG20	53.92	0.49%
77	SVG34	53.30	0.49%
78	SVG65	52.53	0.48%
79	SVG91	51.02	0.47%
80	SVG42	50.13	0.46%
81	SVG131	49.00	0.45%
82	SVG120	48.95	0.45%
83	SVG132	48.60	0.44%
84	SVG135	48.32	0.44%
85	SVG57	48.18	0.44%
86	SVG41	48.12	0.44%
87	SVG19	47.58	0.43%
88	SVG170	45.98	0.42%
89	SVG154	45.52	0.42%
90	SVG122	45.02	0.41%
91	SVG112	44.43	0.41%
92	SVG85	44.23	0.40%
93	SVG110	43.95	0.40%
94	SVG32	43.17	0.39%
95	SVG29	43.07	0.39%
96	SVG49	43.03	0.39%
97	SVG84	42.85	0.39%
98	SVG31	42.45	0.39%
99	SVG156	41.73	0.38%
100	SVG17	41.60	0.38%
101	SVG27	41.12	0.38%
102	SVG39	40.82	0.37%
103	SVG118	40.45	0.37%
104	SVG138	40.23	0.37%
105	SVG58	39.82	0.36%
106	SVG90	39.55	0.36%
107	SVG68	39.02	0.36%
108	SVG63	38.43	0.35%
109	SVG108	38.38	0.35%
110	SVG33	38.23	0.35%
111	SVG23	37.90	0.35%
112	SVG150	36.10	0.33%
113	SVG47	36.10	0.33%
114	SVG83	32.33	0.30%
115	SVG30	29.57	0.27%

116	SVV165	1.43	0.01%
117	SV123	0.40	0.00%
Average breakdown hours for WTGs with breakdown hours is less than 10%			**1.12%**

As it can be seen that 02 out of 117 WTGs in the project activity were having breakdown hours over 10% and the average breakdown hours is 1.12% for the monitoring period, for the remaining 115 WTGs (117-2).

So, the proportion of WTGs which are operating ie., p = 1-0.0112 = 0.9888 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 4 nos. Using random number generator function in excel, the VVB chose the highlighted WTGs in the table above for remote visit on 16-September-2023 (Savalsang Site in Karnataka). The other sites included 26-September-2023 (Burgula Site in Andhra Pradesh) and 29-September-2023 (Vagari Site in Tamil Nadu). The sites in Karnataka was chosen on sampling purposes owing to high number of WTGs among the three sites in the bundle.

Sl 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
1	SVG52	17.1201	75.7237	17.1200	75.7236	0.141
2	SVG53	17.1184	75.7268	17.1119	75.7664	40.130
29	SVG125	17.1176	75.706	17.1163	75.7161	10.183
92	SVG85	17.1179	75.7159	17.1179	75.7159	0.000

The AT cross checked the coordinates of the sampled WTGs through online tools in the video calls during the remote audit and noted down the coordinates. Then checked the distance between the coordinates checked during remote audit 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 be acceptable upon random remote audit on the sampled WTGs

The verification consisted of the following phases.

1. **Planning and Intimation to VERRA about remote site visit assessment:** The assessment team starts with a desk review and as per section 4.1.13 of VCS standard version 4.5/10/, no need for site visit is identified for the project activity. So VKU has decided to conduct a remote site visit for the project activity. Assessment team also shared a NOVS Notice of Validation/Verification Services (NOVS) Form /46/ and submit it to auditing@verra.org, 15 business days before the initial meeting with the project proponent. The form for this project was shared on 29-August-2023 and confirmation for conducting site visit was received from VERRA on 02-September-2023. Decision to take remote site visit was based on independent risk assessment, as defined in section 4.1.13 of VCS standard version 4.5/10/ and remote site visit assessment was finalised and the dates were 16-September-2023 for Savalsang site, 26-September-2023 for Burgula Site & 29-September-2023 for Vagarai Site. More details are provided in section 2.4 of this report.

2. **Strategic Analysis:** Assessment team performed strategic analysis to understand the activities and complexity of the project and to determine the nature and extent of the verification activities. The results of the strategic analysis shall be used in the risk assessment.

3. **Risk Assessment;** Assessment team performed risk assessment of the GHG statement to identify the risk of a material misstatement or nonconformity with the criteria

4. **Evidence Gathering Activities;** Using a risk-based approach assessment team prepared evidence gathering activities, to collect sufficient and appropriate evidence upon which the conclusion shall be based. It will also determine whether the GHG statement conforms to the criteria, taking into account the principles of the standards or GHG programme that apply to the GHG statement.
5. There is no need for onsite visit as per section 4.1.13 of VCS standard version 4.5/10/, therefore, a remote site assessment was conducted for the project activity.
6. **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, the same was documented in VKU.F24W. Audit and Sampling Plan_VKU.VER.128.23_VCS_1521 /41/.
7. **Evidence Gathering Plan;** The evidence-gathering plan is prepared based on the results of the VKU's Assessment Team's risk assessment. It was designed to lower the verification risk to an acceptable level. · The evidence-gathering plan thus specify the type and extent of evidence-gathering activities
8. **Client Confirmation and Approval:** The audit & sampling plan is sent to the client for review and confirmation/approval via email.
9. **Document Review:** Relevant documents, such as the ER Sheet, Monitoring Report and supporting evidences i.e., JMRs. Invoices, calibration records with respect to monitoring plan, methodology, VCS PD and QA/QC procedures are thoroughly reviewed.

10. **Remote site Assessment:** This includes interviews and evaluation of the actual project scenario.
11. **Resolution of Discrepancies:** Any non-conformities identified during the assessment are addressed and resolved.
12. **Independent Review:** A technical reviewer provides an independent assessment.
13. **Final Verification:** After completeness checks, the verification report and certification are issued.

The following sections outline each step in more detail.

2.2 Document Review

During 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 VCS monitoring report for "Wind Based Power Generation by Mytrah Energy (India) Limited (EKIESL-VCS-January-16-01)" version 1.0 of 28-July-2023 and **final Version 3.0 of 15-December-2023**/1/ and the emission reduction calculations spreadsheet for "Wind Based Power Generation by Mytrah Energy (India) Limited (EKIESL-VCS-January-16-01)" version 1.0 of 28-July-2023 and **final Version 2.0 of 28-November-2023** /2/. In addition, the registered VCS Project Description version 02 dated 10-February-2016/3/ has been specifically referred for baseline estimations and the monitoring plan for the project was reviewed. The following **Table-04** lists the documentation that was reviewed during the verification.

As per section 3.26 and clause 3.26.3 of the VCS Standard version 4.5/10/ 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. Thus, the assessment team reviewed the following documents during verification:

Table No: 04; Lists of the documentation that were reviewed during the current verification:

Current Verification Reference Documents	
/1/	VCS monitoring report for "Wind Based Power Generation by Mytrah Energy (India) Limited (EKIESL-VCS-January-16-01)" in India, • Version 1.0 of 28-July-2023 • Version 2.0 of 28-November-2023 • Version 3.0 of 15-December-2023
/2/	Emission Reduction Calculation Spreadsheet for "Wind Based Power Generation by Mytrah Energy (India) Limited (EKIESL-VCS-January-16-01)" in India, • Version 1.0 of 28-July-2023 • Version 2.0 of 28-November-2023
Background Documents/Weblinks	

/3/	Registered VCS PD for the project 'Wind Based Power Generation by Mytrah Energy (India) Limited (EKIESL-VCS-January-16-01)" version 02 dated 10-February-2016
/4/	EPIC Sustainability Services Private Limited: Validation Report: Wind Based Power Generation by Mytrah Energy (India) Limited (EKIESL-VCS-January-16-01), Version 01, dated 12-February-2016
/5/	LGAI Technological Center, S.A (Applus+ Certification): Verification Report: Wind Based Power Generation by Mytrah Energy (India) Limited (EKIESL-VCS-January-16-01), Version 03, dated 19-May-2022
/6/	VCS program Definitions (Version 4.4) of 29-August-2023
/7/	VCS Registration & Issuance Process (Version 4.4) of 31-August-2023
/8/	VCS: VCS Program Guide, version 4.4 of 29-August-2023
/9/	VCS Standard, version 4.4 dated 17-January-2023
/10/	VCS: VCS Standard, version 4.5 of 11-December-2023 **(Latest)**
/11/	Validation and verification manual version 3.2 dated 19-October-2016
/12/	CDM Validation and Verification Standard version 3.0 dated 09-September-2021
/13/	CDM Executive Board: Baseline and Monitoring Methodology "ACM0002: Grid-connected electricity generation from renewable sources- ACM0002 Version 16.0
/14/	VERRA: Project search
/15/	UNFCCC: Project search
/16/	Renewable Energy Certificate Registry of INDIA - Registered RE Generator List (recregistryindia.nic.in)
/17/	I-REC Standard - The International REC Standard Foundation (irecstandard.org)
/18/	Gold Standard Foundation
/19/	EIA NOTIFICATION dated 14-September-2006
/20/	Tool to calculate the emission factor for an electricity system, Version 05.0
/21/	Tool for the demonstration and assessment of additionality, Version 07.0.0
/22/	CO_2 Baseline Database for the Indian Power Sector
/23/	Ministry of Environment, Forest and Climate Change (MoEF&CC) Notification dated 14-September-2006 (S.O. 1533(E)
/24/	Central Electricity Authority (Installation and Operation of Meters) Regulations Notified on 17-March-2006 No. 502/70/CEA/DP&D Amendments Notified on 26-June-2010 No. 502/6/2009/DP&D/D-I https://cea.nic.in/wp-content/uploads/2020/02/meter_reg.pdf

	Metering Regulations Archives - Central Electricity Authority (cea.nic.in)
Reference/Supporting documents submitted by PP to VVB	
/25/	Power Purchase Agreement
/26/	Certificates of Calibration for all the energy meters for the project activity active during current monitoring period (01-April-2022 to 30-June-2023, inclusive of both start and end dates)
/27/	JMRs/B-Forms Issued by respective State Utility/Discom to PP
/28/	Invoices issued by PP to DISCOM
/29/	LCS Meter Readings
/30/	Letter of declaration dated from PP regarding not having created or sought any other form of environmental credit for the current verification period (01-May-2022 to 30-June-2023, inclusive of both start and end dates)
/31/	Commissioning Certificates of all 223 Machines (Wind Turbine Generators) of the project activity.
/32/	Technical Specifications of Wind Turbine Generators (WTGs).
/33/	Grievance Register/Grievance-Resolution Letters present on project implemented site; more information related to the same has been included in Section 4.2.2 of this report
/34/	Tripping/Breakdown Details
/35/	Monthly Generation Reports
VVB Documents used during Current Verification	
/36/	GPS Google earth software used for Location; Google Earth Pro
/37/	GPS Map Camera: Geotag Photos & Add GPS Location
/38/	Remote site visit on dates: 16-September-2023 (Savalsang Site in Karnataka), 26-September-2023 (Burgula Site in Andhra Pradesh) 29-September-2023 (Vagari Site in Tamil Nadu); Remote site Visit Photographs/Evidences
/39/	Personnel Interviews and Focussed Group Discussions during remote visit detailed in section 2.3 of this report.
/40/	VKU-Attendance Sheet of Audit_ VKU.VER.128.23_VCS 1521
/41/	VKU-Audit and Sampling Plan_ VKU.VER.128.23_VCS 1521
/42/	ISO 14064-3:2019: Greenhouse gases — Part 3: Specification with guidance for the verification and validation of greenhouse gas statements

/43/	ISO 14065:2020: General principles and requirements for bodies validating and verifying environmental information
/44/	ISO/IEC 17029:2019: Conformity assessment — General principles and requirements for validation and verification bodies
/45/	ISO 14064-2:2019: Greenhouse gases; Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements
/46/	Notice of Validation/Verification Services Form- VKU.VER.128.23_VCS 1521
/47/	Sampling and surveys for CDM project activities and programmes of activities

2.3 Interviews

A remote site visit assessment/38/ was performed by the assessment team. The representatives of the PP were interviewed personally by assessment team on 16-September-2023 (Savalsang Site in Karnataka), 26-September-2023 (Burgula Site in Andhra Pradesh) and 29-September-2023 (Vagari Site in Tamil Nadu); i.e., Tables 05 & 06 provide a comprehensive overview of the Remote interview process/39/ conducted during the verification. These tables outline the personnel involved in the interviews, along with their respective roles. The interviews specifically targeted individuals responsible for monitoring the project activity, data collection and management, as well as those involved in the 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 key personnel interviewed during the opening meeting and closing meeting session of the remote site inspection, and the main topics of the interviews are summarized in the table below:

Table no: 05: Details of Personnel Interview

S.No	Name	Gender	Designation	Topic of Discussion
1	P. Venkata Mallikarjun	Male	JSW-AM	Implementation of the project, Baseline emission, Emission reduction calculation,
2	Kalidass. S	Male	JSW – Sr. Engineer	Technical description of the project and monitoring along with QA/QC SCADA, Breakdown details and maintenance of generation records
3	Ramesh Khore	Male	General Manger	Data recording, management and archiving procedure

The topics covered during interview ranges from general features and implementation of project to technical details of the project like calibration details, monitoring and measuring system and data collection, recording, emergency procedures and archiving procedures. The assessment was based on the feedback received during interview/37/ coupled with the documentation.

During Remote site visit assessment/36/, Assessment team also interviewed the local stakeholders involved in the projects /37/ to verify implementation of grievance mechanism and process of its resolution, as mentioned in the Monitoring report/1/ (refer section 1.11, & 2.2 of MR/1/) by the PP. The assessment team confirmed the sustainable development claims and verification of the socio-economic impact made by the project on the local community. Assessment team also checked the records and observed that the PP has provided opportunities for the locals to express their opinions and grievances, with efforts to resolve any issues through consultation with stakeholders. Assessment team thus verified all the above statements via focussed group discussions and personal interview/37/ with stakeholders as tabulated below:

Table no: 06: Details of Personnel Interview/Focussed Group Discussion with Stakeholders

S.No	Name	Gender	Designation	Category	Topic of Discussion
1	J. Venkata Ramana	Male	Driver	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 address of their grievance mechanism followed by the project proponent Scope and generation of employment in the locality due to the implementation of said project activity in the area. The ongoing trainings provided to the locals for self-employment.
2.	Mohan Rajan	Male	Office Boy		
3.	P. Mari Muthu	Male	Security		

The VKU Assessment Team meticulously documented the information obtained during the interviews with site personnel /39/. This data was recorded using VKU's dedicated form, specifically VKU.F46W, known as the Attendance Sheet for Audit/40/ Through a comprehensive process involving documentation, desk review, document verification, and interviews with site personnel and local stakeholders, VKU Assessment Team affirms that no negative comments have been received during the current monitoring period. For further details, please refer to *section 4.2.2* below.

2.4 Site Visits

As per clause 4.1.13 of VCS standard version 4.5/10/, a remote site visit assessment was undertaken by the assessment for all the three sites of this project activity:

Savalsung Project Site is located in different villages of District - Bijapur in State - Karnataka, Country – India.

Vagrai project site located in different villages of Districts - Tirupur and Dindigul in State - Tamil Nadu, Country – India.

Burgula project site is located in village - Burgula of District - Kurnool in State - Karnataka, Country – India.

Further the location along with longitude and is mentioned in section 4.1 of this report.
A Remote site inspection was undertaken by the assessment team for the project location identified in the MR/1/ at

Project Sites	Location of Project Site	Date of Remote Audit
Savalsung Project Site	Savalsang Village in District- Bijapur of state- Karnataka	16-September-2023
Vagrai project site	Burgula Village in District – Kurnool of state – Andhra Pradesh	26-September-2023
Burgula project site	Vagarai Village in Palani taluka of Dindigul District of state – Tamil Nadu	29-September-2023

- An assessment of the implementation and operation of the registered project activity as per the registered VCS PD Version 02 dated 10-February-2016/3/ and VCS MR/1/.
- A review of information flows used to generate, aggregating and reporting of the monitoring parameters.
- Interviews/39/ with relevant personnel to determine whether the operational and data collection procedures are implemented in accordance with the monitoring plan in the registered VCS Project Description (PD) version 02 dated 10-February-2016/3/.

- A cross check between information provided in the monitoring report and data from other sources such as plant generation log books, inventories, purchase records or similar data sources.
- A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the VCS PD Version 02 dated 10-February-2016/3/ applied methodology including applicable tool(s), and wherever applicable, the applied standardized baseline.
- 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 aim of this verification phase is to address any remaining issues that require clarification to enable VKU's to reach a favourable conclusion regarding project description. In the interest of transparency, a customized verification protocol has been developed specifically for this project. This protocol transparently outlines the requirements, methods of verification and the outcomes of verifying the specified criteria. The verification protocol consists of three tables; each containing various columns, which are described as follows.

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 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.

Keeping in line with the VCS Standard Version 4.5, Clause 4.1.21 Assessment team has documented a summary of total **05 Findings** that include, (***00 FARs, 02 CLs and 03 CARs)*** 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 VCS Validation Report/4/ and previous VCS Verification Report /5/, assessment team confirms that no FAR was raised during Validation and previous Verification which needs to be closed during this verification and **no FAR has been raised during current verification, (01-April-2022 to 30-June-2023; Inclusive of both start and end dates).**

2.6 Eligibility for Validation Activities

VKU has not undertaken any validation activities as part of the verification process and does not possess accreditation for validating any pertinent sectoral scope Hence this section does not apply. 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 /39/ during remote visit assessment/38/

Assessment team assessed the VERRA's website on 23-December-2023: https://verra.org/validation-verification/vku-certification-pvt-ltd/#vcs wherein the scope of services of VKU Certification Pvt. Ltd. is mentioned as verification. 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. Thus, ensuring that the accreditation details mentioned in this report (FVR) is consistent and correct.

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

The project is registered under VCS[2] & REC[3]. PP has claimed REC benefits for capacity 45 MW out of total project capacity 233.1 MW. PP is seeking to get REC for 45 MW & GHG emission reduction for 188.1 MW from VCS will be claimed from VCS for the current monitoring period. Audit team has checked the REC/16/ Mechanism database of India and I-REC/17/ mechanism database found that the project activity is accredited / registered under only REC mechanism and not in I-REC mechanism which was verified from the (Renewable Energy Certificate Registry of India) REC/16/ (International-Renewable Energy Certificate Standard Standard) I-REC/17/ website. Verification team performed similar comprehensive search across the GHG programs including GS Registry, CDM, GCC, UCR & CR-I using matching project titles and capacity, as well as Project Proponent details. This diligent examination did not yield any instances of the project being registered under any of the aforementioned, however PP has submitted the declaration/26/ for the same.

Project Site	Capacity availing REC	No of WTGs availing REC	Capacity of each WTG	HTSC numbers of WTGs (WTGs availing REC)
Vagrai project site	45 MW	30 WTGS	1500kW	DRA 01, 03, 04, 05, 06, 07, 08, 09, 12, 13, 15, 17, 18, 21, 22, 23, 24, 25, 26, 27, 31, 32, 33, 43, 44, 46, 47, 48, 49, 54

Thus, the PP declares that similar Net GHG emission reductions generated by the Project will not be used for compliance with an emissions trading program or to meet binding limits on GHG emissions in any Emission Trading program or other binding limits any specific monitoring period under two mechanisms.

This was confirmed by checking VERRA registry website and REC website and similar exercise was performed for CDM/GS/GCC/UCR & UC-I registries with similar project title/capacity and Project Proponents but the assessment team was not able to trace any such project registered under any of the above stated registries or under any other similar mechanisms. Similarly, an exercise of independently searching for such project registration or claim for current monitoring period was performed for other GHG related benefits such as I-REC/17/ benefits and based on both independent assessment and declaration submitted by PP/30/ stating that the project is seeking to get REC for 45 MW out of 233.1 MW and for remaining 188.1 MW out of 233.1 MW

[2] https://registry.verra.org/app/projectDetail/VCS/1521

[3] Renewable Energy Certificate Registry of India

GHG emission reduction (VCUs) will be claimed from VCS for the current monitoring period, the assessment team accepted the claim that there is no double counting from this project activity for current monitoring period.

The assessment team has also cross-checked the issuance records available on the Verra website and thus confirmed & ensured that the emission reduction generated from the project activity are not & will not be double counted hence accepted by the assessment team.

Rejection by other GHG programs

The Project is not rejected by other GHG programs. A declaration/30/ 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:

- https://www.recregistryindia.nic.in/
- http://cdm.unfccc.int/
- http://www.goldstandard.org/
- I-REC Standard - The International REC Standard Foundation (irecstandard.org)
- https://cri.nccf.in/
- International Carbon Registry - International Carbon Registry
- GCC PROJECTS PORTAL (globalcarboncouncil.com)

3.2 Methodology Deviations

No instances of methodology deviation have been identified throughout the current monitoring period from 01-April-2022 to 30-June-2023 (Inclusive of both start and end dates), signifying the adherence and compliance of the project to the prescribed methodologies. Furthermore, it is noteworthy that no methodology deviations were observed during the Validation & and previous VCS Verification processes which were confirmed from the VCS Validation report /4/ and previous VCS Verification reports/5/, affirming the project's steadfast commitment to upholding the designated methodologies and ensuring accurate and reliable results.

3.3 Project Description Deviations

A. There are two Project description deviations applied during current monitoring period i.e., 01-April-2022 to 30-June-2023 (Inclusive of both the days). Description of the deviation and the assessment on conservativeness of the deviations is provided below.

Deviation- A1

The geo-cordinates were mentioned incorrect due to typo-error for Vagrai and Savalsung site which are corrected and requested as deviation in current monitoring period. This deviation is applied in Appendix-3 of MR.

The project location was verified by the assessment team through Google earth pro/36/ during desk review and GPS map camera software/37/ during remote visit/38/ and hence found to be correct. The nature of deviation is permanent. VKU thus states that the above requested deviation is verified and found to be correct and acceptable. This deviation doesn't impact the applicability of the methodology, additionality or the appropriateness of the baseline scenario. WTGs Vagrai and Savalsung project sites coordinates have been updated and are now listed in section Appendix-3 of MR and 4.1 of this report.

Deviation -A2

The machine ID for the WTGs were mentioned incorrect for Savalsung site. Same is corrected in Appendix-1 and requested as deviation. The deviation is applied in Appendix-1 of MR.

The machine IDs was verified by the assessment team during remote visit/38/ and hence found to be correct. The nature of deviation is permanent. VKU thus states that the above requested deviation is verified and found to be correct and acceptable. This deviation doesn't impact the applicability of the methodology, additionality or the appropriateness of the baseline scenario. WTGs Vagrai and Savalsung project sites coordinates have been updated and are now listed in section Appendix-1 of MR and 4.1 of this report

B. **The following four deviation was reported during the previous monitoring periods and will be considered in subsequent verifications.** Description of the deviation and the assessment on conservativeness of the deviations is provided below.

Deviation B1:

This project Tamil Nādu site WTGs are under group captive since commissioning. To meet group captive consumers annual energy requirement, banking is done during high wind season ((i.e., from June to Oct) and then those units will get utilize in low wind season (i.e., from Nov to Mar). Due to this process electricity in invoice is different than JMR and cannot be consistent and not appropriate to compare or to take lower values as conservative approach. Also, TANGEDCO will deduct Transmission & Distribution loss in generating end while doing the energy allocation. This T&D loss will vary based on consumer drawl voltage (3.06%, 4.24%. Due to above reason, the comparison of JMR and invoices value for Tamil Nadu Site (Vagarai) is not appropriate as there is adjustment of electricity due to banking as explained above. Thus, PP is considering the JMR value for net electricity supplied to grid and for emission reduction calculations. There is no cross check possible due to difference in JMR and invoice values due to banking for Tamil Nadu site, hence only JMR value is considered for ER calculations. State electricity board is doing adjustment in invoice based on JMR value.

Hence month wise JMR and invoice is not matching. Since JMRs are issued by state electricity board and authentic, JMR values are considered for ER calculations. There is no material impact

on ER calculations as primary source of data are correctly applied for ER calculations. This deviation was already approved in previous verification i.e., 4th verification (02-August-2019 to 31-March-2020) & thus accepted by assessment team.

Deviation B2:

For Burgula site of Andhra Pradesh, there is no individual meter which shows the generation from this site. The combined generation is shown in meter located at 132/33 KV, Racharla and JMR issued for 39.7 MW. This deviation was already approved in previous verification i.e., 6th verification (01-June-2021 to 28-February-2022) & thus accepted by assessment team.

Deviation B3:

For Burgula site of Andhra Pradesh, export value for 37.4 MW is given and can be used for calculation but the import values need to be apportioned to obtain import for 37.4 MW. This deviation was already approved in previous verification i.e., 6th verification (01-June-2021 to 28-February-2022) & thus accepted by assessment team.

Deviation B4:

The invoices for Burgula site is generated on export value. The total generation cannot be cross-checked with invoice. Hence, as conservative approach the minimum of invoice JMR and Invoice is considered for emission reduction. This deviation was already approved in previous verification i.e., 6th verification (01-June-2021 to 28-February-2022) & thus accepted by assessment team .

Above mentioned deviations B1, B2, B3 and B4 were alrady approved during previous monitoring periods. As it does not affect project design and additionality of project activity. Hence deviations are accepted by VVB.

3.4 Grouped Project

This is not a grouped project. Therefore, this section is Not Applicable.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

Based on the remote site assessment carried out in conjunction with the representative from the project proponent (PP), it was determined that the project is being executed in accordance with the requirement outlined in the registered VCS PD version 02 dated 10-February-2016/3/ and approved monitoring plan. Kinetic Energy of wind is the main source of power generation. The project activity is step forward in harnessing kinetic energy of wind and further diffusion of the wind technology in the region. The project activity leads to the promotion and demonstrates the success of wind projects in the region which further motivate more investors to invest in wind power projects. Hence, the project activity leads to technological well-being.

The main purpose of this project activity is to generate clean form of electricity through renewable wind energy sources. The project activity is a new facility and involves a wind-based power generation project. The project activity involves installation of 233.1 MW wind power project in in different states of India. The Project activity consists of total 223 Wind Turbine Generators (WTGs) with capacities of 0.85 MW & 1.5 MW located at three different sites (Savalsung, Vagrai & Burgula) in three different states (Karnataka, Tamil Nadu & Andhra Pradesh) of India. Project Capacity has been verified through combined rating of 223 WTGs installed at project site/31/.

Savalsung Project Site: -

Savalsung project site involved installation and operation of 95.2 MW consisting of 112 WTGs of rated capacity 0.85 MW each in different villages of district Bijapur in state Karnataka by Mytrah Vayu Krishna Private Limited. Siemens Gamesa Renewable Power Private Limited is the O & M entity for this project site and responsible for the operations, maintenance and recording of data. The generated electricity from Burgula site is seamlessly integrated into the Unified Indian Grid (Previously Southern Grid). Notably, this generation of energy abstains from utilizing fossil fuels, ensuring absence of greenhouse gas emissions.

Vagrai Project Site: -

Vagrai project site involved installation and operation of 100.5 MW consisting of 67 WTGs of rated capacity 1.5 MW each in different villages of districts Tirupur and Dindigul in state Tamil Nadu by Mytrah Vayu (Manjira) Private Limited. Regen Powertech Private Limited is the O & M entity for this project site and responsible for the operations, maintenance and recording of data. The generated electricity Vagrai site is seamlessly used for captive consumption and deliverd to captive users through the Unified Indian Grid (Previously Southern Grid). Notably, this generation of energy abstains from utilizing fossil fuels, ensuring absence of greenhouse gas emissions.

Burgula Project Site: -

Burgula project site involved installation and operation of 37.4 MW consisting of 44 WTGs of rated capacity 0.85 MW each in village Burgula of district Kurnool in state Karnataka by Mytrah Vayu Krishna Private Limited. Suzlon Global services Pvt ltd is the O & M entity for this project site and responsible for the operations, maintenance and recording of data. The generated electricity from Burgula site is seamlessly integrated into the Unified Indian Grid (Previously Southern Grid). Notably, this generation of energy abstains from utilizing fossil fuels, ensuring absence of greenhouse gas emissions.

Mytrah Vayu Krishna Private Limited and Mytrah Vayu (Manjira) Private Limited are the subsidiary companies of Mytrah Energy (India) Limited, which is also the project proponent in the project activity.

The project was fully commissioned on date of commissioning of last machine (223th WTG) i.e., 26-February-2015. The entire project is operating smoothly with schedule maintenance at regular intervals. The dates of commissioning were also verified by Assessment team during the remote audit/38/ that there is no change in project design with reference to previous verification/5/and VCS standard version 4.5 /10/ in section 3.3 of the report. The project is implemented as per the description provided in the registered VCS PD /3/.

The Project WTGs successfully completed 08 years, 01 months, 12 days and are currently operational and during the current monitoring period (01-April-2022 to 30-June-2023; Inclusive of both the days) under first the first crediting period, no unforeseen incidents or events occur that could significantly impact the operation of the project activity were identified, with the exception of scheduled maintenance and service breakdowns.

The total duration of these breakdowns was calculated to be 48,649 hours /32/. It is important to note that these breakdowns did have considerable impacts on the project activity's reduction of greenhouse gas (GHG) emissions or the monitoring methodology employed. There was some unexpected downtime of some WTGs & due to routine maintenance etc.

Table no: 07: Breakdown Hours for the current Monitoring Period (01-April-2022 to 30-June-2023)

Total no of WTG	223	
Number of WTGs considered for ER calculation	193	As 30 are claiming REC
Total days in monitoring period	456	
Total operating hours	2,112,192	
Total breakdown hours	48,649	
Break down hours in %	2.30%	
Actual operational hours	2,061,938	
Operational hours in %	97.70%	

The project activity involves installation & operations of 223 WTGs with total capacity of 233.1 MW but during the current monitoring period PP has claim for only 193 WTGs with total capacity of 188.1 MW (As PP has taken REC benefits for 30 WTGs of total 45 MW for current monitoring period). Therefore, the total operational hours for the 193 WTGs were **2,112,192** hours, representing 456 days. During the monitoring period, the project activity experienced no unexpected incidents or events that could have had a significant impact on its operation. However, there were some scheduled with minor unscheduled breakdowns lasting **48,649** hours, caused by internal or external grid failures breakdowns, plant maintenance and service, as detailed in section 3.1 of the monitoring report (MR)

The breakdowns were due to scheduled maintenance activity as per the manufacture's specification. Moreover, it is important to note that the all WTGs was not entirely shut down during these breakdown hours; only the affected WTGs were temporarily taken out of operation.

The verification process involved reviewing the monthly generation records/35/ and breakdown excel sheet /34/ provided by the project proponent (PP). Additionally, a remote site visit assessments to the project sites/38/ was conducted, where it was confirmed that only the affected WTGs were shut down while the rest of the WTGs remained operational. This information is consistent with the details mentioned in Section 3.1 of the MR/01/. The assessment team also conducted interviews with key personnel from the PP, including senior engineers, junior engineers, and an assistant manager/39/. These interviews took place during the remote site visit /39/. The assessment team has concluded that the breakdowns and the resulting partial shutdown of the project activity do not have a significant impact on the calculation of emission reductions (ER). The project underwent continuous operation, with only the affected parts being temporarily shut down. This approach is deemed acceptable by the assessment team and is verified to align with the methodology. Furthermore, no unforeseen incidents were identified that would affect the applicability of the methodology.

Based on the documents review (monthly generation records, breakdown log sheet records present on project site and tripping details for each month) submitted to VKU by PP that the plant supplied **375,917.13 MWh** of electricity, and thus contributing to **369,034 tCO_2e** GHG reductions. The emission reduction for this monitoring period pro rata comparing with registered VCS PD is **598,982 tCO_{2e}**, whereas actual emission reductions achieved are **369,034 tCO_2e**, which is **-38.39%** lower than the estimated emission reductions for the current verification period. Further explanation is provided section 4.5 of this report.

Figure 1.1: "Vagarai Project Site" implemented location verified and mapped down

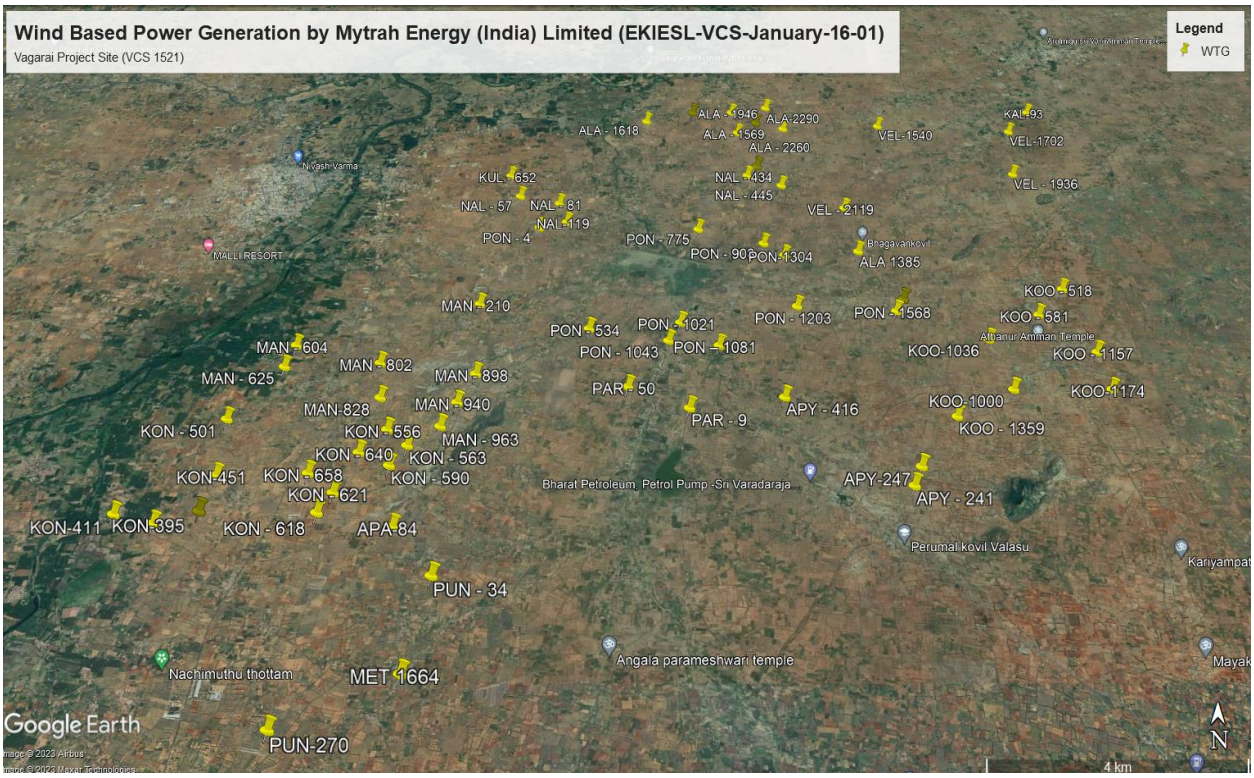


Figure 1.2: "Burgula Project Site" implemented location verified and mapped down

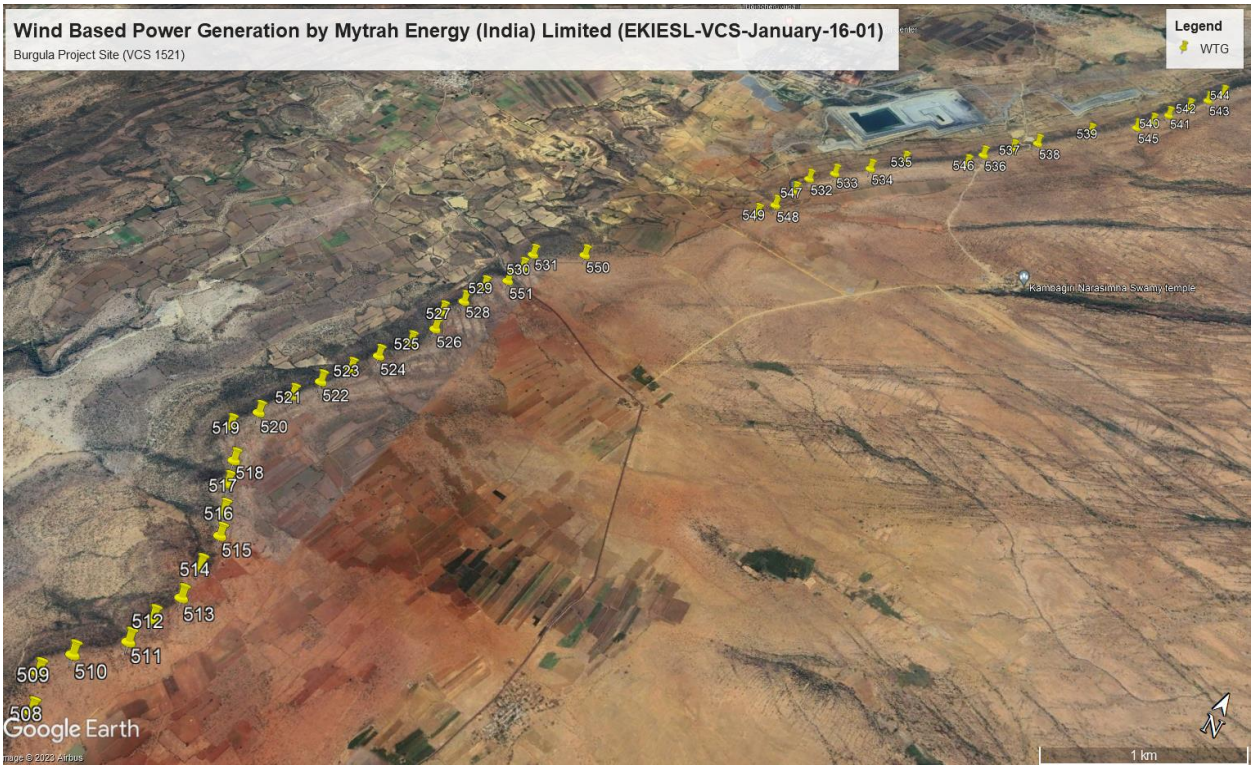
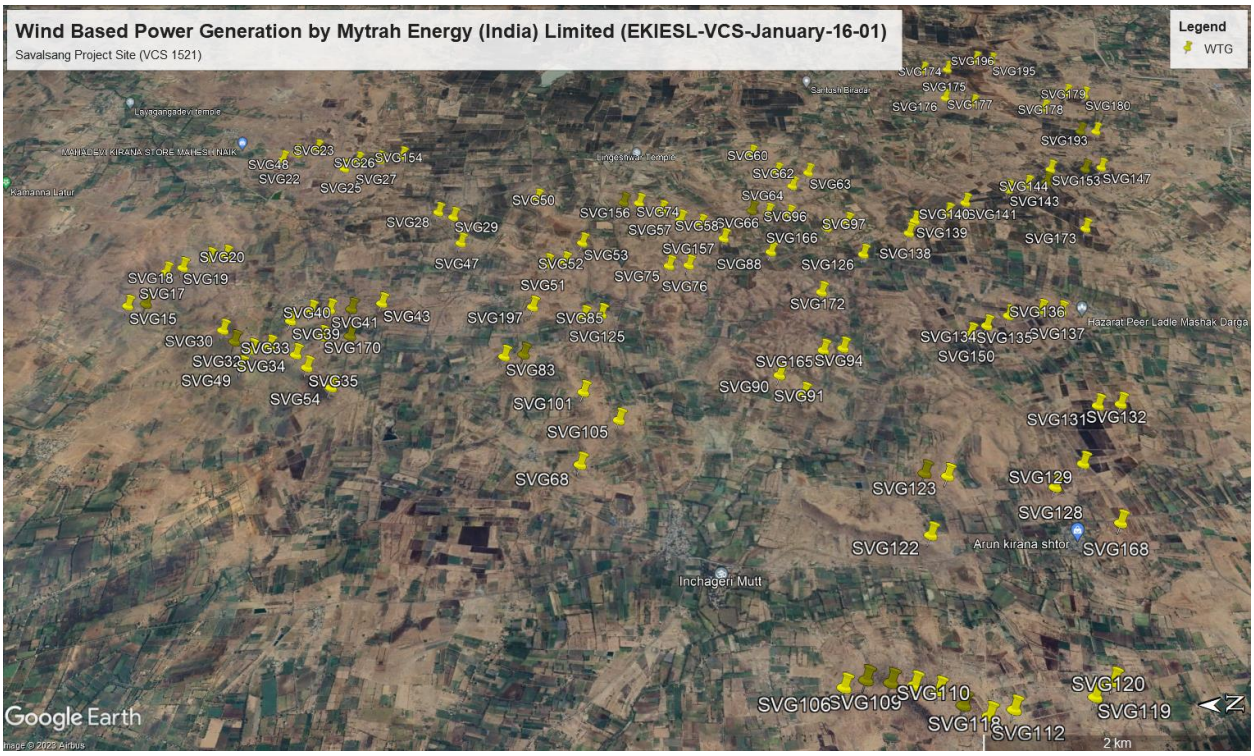


Figure 1.3: "Savalsang Project Site" implemented location verified and mapped down



The project location was verified by the assessment team through Google earth pro/36/ during desk review and GPS map camera software during remote site visit /38/. Moreover, assessment team confirm that the latitude and longitude as mentioned in the registered VCS PD dated 10-February-2016/3/, VCS Validation Report/4/, VCS MR/1/.

Table no 08: The WTG wise commissioning dates, latitudes and longitudes are confirmed below:

For Vagrai Project Site (Tamil Nadu)

S.No.	Machine ID	DOC	Feeder Nos.	Latitude	Longitude
1	KOO-518	01-06-2014	Feeder 9	10.69948341 N	77.6882558 E
2	KOO-1359	01-06-2014		10.66563968 N	77.65962324 E
3	APY-241	01-06-2014	Feeder 5	10.65021639 N	77.64901256 E
4	APY-416	01-06-2014		10.67020783 N	77.62907088 E
5	PAR-09	01-06-2014		10.66760795 N	77.6115463 E
6	PON-534	01-06-2014		10.68803933 N	77.59283778 E
7	PON-1043	01-06-2014		10.68473981 N	77.60821209 E
8	NAL-119	01-06-2014	Feeder 2	10.7208402 N	77.58716885 E

9	NAL-81	01-06-2014	Feeder 5	10.72735208 N	77.58532376 E
10	NAL-57	01-06-2014		10.72995488 N	77.57654703 E
11	MAN-210	01-06-2014	Feeder 9	10.69502488 N	77.57087056 E
12	MAN-898	01-06-2014		10.67605028 N	77.57193498 E
13	MAN-802	01-06-2014		10.67881165 N	77.55364153 E
14	KON-556	01-06-2014	Feeder 4	10.6625153 N	77.55755231 E
15	KON-563	01-06-2014		10.65892169 N	77.56165127 E
16	KON-590	01-06-2014		10.65451458 N	77.55915715 E
17	KON-640	01-06-2014		10.65735343 N	77.55342588 E
18	KON-658	01-06-2014		10.65283678 N	77.54550489 E
19	KON-621	01-06-2014		10.64871125 N	77.55058605 E
20	KON-501	01-06-2014	Feeder 3	10.66499329 N	77.52838599 E
21	ALA-1639	23-06-2014	Feeder 8	10.76318948 N	77.61626788 E
22	ALA-1946	23-06-2014		10.76326328 N	77.62570771 E
23	NAL-434	23-06-2014	Feeder 6	10.73760525 N	77.62759636 E
24	KON-234	14-07-2014		10.64497336 N	77.52904287 E
25	PAR-50	01-06-2014	Feeder 5	10.67281499 N	77.60039121 E
26	MAN-625	01-06-2014	Feeder 3	10.67788177 N	77.53579195 E
27	MAN-604	01-06-2014	Feeder 2	10.68348459 N	77.53683425 E
28	ALA-2301	23-06-2014	Feeder 8	10.75886068 N	77.63132567 E
29	ALA-1569	23-06-2014		10.75463624 N	77.6265833 E
30	ALA-2352	23-06-2014		10.74110802 N	77.63007535 E
31	KOO-1157	01-06-2014	Feeder 2	10.68178844 N	77.68985383 E
32	PON-1081	01-06-2014		10.68348435 N	77.61787566 E
33	MAN-940	01-06-2014	Feeder 9	10.66893415 N	77.56925334 E
34	PON-1565	23-06-2014		10.69642995 N	77.65552456 E
35	PON-1568	23-06-2014	Feeder 6	10.69303118 N	77.6535857 E

36	VEL-1936	23-06-2014	Feeder 8	10.73813524 N	77.68816772 E
37	ALA-1618	23-06-2014	Feeder 9	10.75944434 N	77.6049963 E
38	PON-908	23-06-2014	Feeder 8	10.71374814 N	77.62914446 E
39	PON-1203	23-06-2014	Feeder 6	10.69438029 N	77.63405677 E
40	MAN-963	16-07-2014	Feeder 7	10.66329726 N	77.56688572 E
41	PON-1021	01-06-2014	Feeder 2	10.68974267 N	77.61070314 E
42	KOL-652	01-06-2014	Feeder 5	10.7374949 N	77.57384237 E
43	PON-4	01-06-2014		10.71893637 N	77.58140577 E
44	MAN-828	01-06-2014	Feeder 9	10.67012558 N	77.55507631 E
45	KON-618	01-06-2014	Feeder 3	10.6446245 N	77.54867946 E
46	KON-395	01-06-2014		10.64247133 N	77.52219864 E
47	KON-451	01-06-2014	Feeder 2	10.65236689 N	77.52989861 E
48	APA-84	01-06-2014	Feeder 3	10.64182591 N	77.56167279 E
49	PUN-270	01-06-2014		10.60746419 N	77.54929363 E
50	PUN-34	04-06-2014		10.63256556 N	77.56924986 E
51	VEL-1702	23-06-2014	Feeder 9	10.75513671 N	77.69153445 E
52	KAL-093	23-06-2014	Feeder 8	10.76334694 N	77.69804901 E
53	ALA-2290	23-06-2014		10.76527764 N	77.63428714 E
54	PON-775	23-06-2014	Feeder 6	10.71842551 N	77.61554436 E
55	ALA-2260	23-06-2014		10.75628612 N	77.6376538 E
56	MET-164	09-01-2015	Feeder 7	10.61592339 N	77.56684556 E
57	NAL-445	03-12-2014		10.73391078 N	77.63495601 E
58	KOO-1036	31-10-2014	Feeder 6	10.68513012 N	77.6699966 E
59	VEL-1540	03-12-2014		10.75739179 N	77.66053403 E
60	KOO-1174	31-10-2014	Feeder 7	10.67220444 N	77.68962334 E
61	KOO-1000	31-10-2014		10.67217045 N	77.67146366 E
62	PON-1304	31-10-2014		10.70991951 N	77.63314951 E

63	APY-247	06-01-2015		10.65429232 N	77.65102078 E
64	KON-411	26-02-2015		10.64434508 N	77.51504326 E
65	KOO-581	18-12-2014		10.69196175 N	77.68144785 E
66	VEL-2119	24-12-2014		10.72574112 N	77.64794111 E
67	ALA-1385	04-02-2015		10.71111522 N	77.64877317 E

For Burgula Project Site (Andhra Pradesh)

S. No.	Feeder Nos.	Location No.	DOC	Latitude	Longitude
1	Feeder 1	508	21-02-2014	15.154461 N	77.922135 E
2		510	21-02-2014	15.157268 N	77.921522 E
3		511	21-02-2014	15.158979 N	77.923322 E
4		513	21-02-2014	15.161872 N	77.923761 E
5		514	21-02-2014	15.163549 N	77.923292 E
6		515	21-02-2014	15.165388 N	77.922815 E
7		516	21-02-2014	15.166574 N	77.921892 E
8		517	21-02-2014	15.167997 N	77.920787 E
9		518	21-02-2014	15.16929 N	77.919977 E
10		519	21-02-2014	15.170968 N	77.918066 E
11		520	21-02-2014	15.172449 N	77.918783 E
12	Feeder 2	528	21-02-2014	15.185218 N	77.923655 E
13		529	21-02-2014	15.186921 N	77.923976 E
14		530	21-02-2014	15.189489 N	77.925118 E
15		531	21-02-2014	15.190881 N	77.925026 E
16	Feeder 3	532	21-02-2014	15.206692 N	77.937622 E
17		533	21-02-2014	15.208101 N	77.938972 E
18		534	21-02-2014	15.209818 N	77.940958 E
19		535	21-02-2014	15.211871 N	77.942781 E
20		536	21-02-2014	15.215178 N	77.947515 E

21		537	21-02-2014	15.216917 N	77.949166 E
22		538	21-02-2014	15.218416 N	77.950564 E
23		539	21-02-2014	15.221591 N	77.953603 E
24		540	21-02-2014	15.225099 N	77.957372 E
25		541	21-02-2014	15.226569 N	77.958248 E
26		542	21-02-2014	15.228387 N	77.959399 E
27		543	15-03-2014	15.229998 N	77.960501 E
28		545	15-03-2014	15.223820 N	77.956471 E
29	Feeder 3	546	15-03-2014	15.213598 N	77.946804 E
30		547	15-03-2014	15.204944 N	77.93730 E
31	Feeder 2	551	15-03-2014	15.188055 N	77.924987 E
32	Feeder 1	509	15-03-2014	15.155886 N	77.920862 E
33		512	15-03-2014	15.160386 N	77.923416 E
34	Feeder 2	521	15-03-2014	15.174326 N	77.91959 E
35		522	15-03-2014	15.175897 N	77.92030 E
36		523	15-03-2014	15.177475 N	77.921177 E
37		524	15-03-2014	15.179081 N	77.921943 E
38		525	15-03-2014	15.180875 N	77.922916 E
39		526	15-03-2014	15.182457 N	77.923515 E
40		527	15-03-2014	15.183845 N	77.923022 E
41	Feeder 3	544	15-03-2014	15.231485 N	77.961368 E
42		548	15-03-2014	15.202938 N	77.936743 E
43		549	15-03-2014	15.201556 N	77.936035 E
44	Feeder 2	550	15-03-2014	15.192441 N	77.927995 E

For Savalsang Project Site (Karnataka)

S.No	Machine ID	DOC	Feeder Nos.	Latitude (N)	Longitude (E)

1.	SVG15	02-06-2014		17.1604 N	75.717 E
2.	SVG16	02-06-2014		17.1588 N	75.7173 E
3.	SVG17	03-05-2014		17.1582 N	75.7219 E
4.	SVG18	03-05-2014		17.1568 N	75.7226 E
5.	SVG19	03-05-2014		17.1546 N	75.7241 E
6.	SVG20	03-05-2014		17.1531 N	75.7245 E
7.	SVG22	30-04-2014	Feeder-01	17.151 N	75.7408 E
8.	SVG23	29-04-2014		17.1477 N	75.7429 E
9.	SVG25	29-04-2014		17.1441 N	75.7392 E
10.	SVG26	01-05-2014		17.1429 N	75.7406 E
11.	SVG27	29-04-2014		17.1406 N	75.7408 E
12.	SVG28	30-04-2014		17.1332 N	75.7316 E
13.	SVG29	30-04-2014		17.1316 N	75.7308 E
14.	SVG30	01-05-2014		17.1507 N	75.7137 E
15.	SVG31	01-05-2014		17.1493 N	75.7122 E
16.	SVG32	10-05-2014		17.1475 N	75.7111 E
17.	SVG33	02-05-2014		17.146 N	75.7116 E
18.	SVG34	01-05-2014		17.1434 N	75.7105 E
19.	SVG35	01-05-2014		17.1421 N	75.7089 E
20.	SVG37	04-05-2014		17.139 N	75.713 E
21.	SVG39	01-05-2014	Feeder-02	17.1448 N	75.715 E
22.	SVG40	01-05-2014		17.1432 N	75.7164 E
23.	SVG41	01-05-2014		17.1415 N	75.7166 E
24.	SVG42	01-05-2014		17.1395 N	75.7167 E
25.	SVG43	02-04-2015		17.1368 N	75.7175 E
26.	SVG47	01-05-2014		17.1304 N	75.7266 E
27.	SVG48	30-04-2014		17.1497 N	75.742 E

28.	SVG49	04-05-2014		17.1479 N	75.7089 E
29.	SVG50	01-05-2014		17.1233 N	75.734 E
30.	SVG51	29-04-2014		17.1217 N	75.7234 E
31.	SVG52	30-04-2014		17.12 N	75.7237 E
32.	SVG53	30-04-2014		17.1184 N	75.7267 E
33.	SVG54	06-08-2014		17.1395 N	75.7064 E
34.	SVG57	03-05-2014		17.1086 N	75.7305 E
35.	SVG58	03-05-2014		17.1066 N	75.7298 E
36.	SVG60	01-05-2014		17.1007 N	75.7422 E
37.	SVG62	01-05-2014		17.0982 N	75.7389 E
38.	SVG63	01-05-2014		17.0949 N	75.7388 E
39.	SVG64	01-05-2014		17.0968 N	75.7364 E
40.	SVG65	01-05-2014		17.1013 N	75.7321 E
41.	SVG66	01-05-2014		17.0997 N	75.7317 E
42.	SVG68	02-06-2014	Feeder-03	17.1176 N	75.6977 E
43.	SVG74	02-06-2014		17.1105 N	75.7321 E
44.	SVG75	03-05-2014		17.1099 N	75.7232 E
45.	SVG76	03-05-2014		17.108 N	75.7233 E
46.	SVG83	06-08-2014		17.1248 N	75.7104 E
47.	SVG84	05-06-2014		17.1231 N	75.7107 E
48.	SVG85	01-05-2014		17.1179 N	75.7158 E
49.	SVG88	05-05-2014		17.0999 N	75.7254 E
50.	SVG90	06-05-2014		17.1005 N	75.7082 E
51.	SVG91	06-05-2014		17.0986 N	75.7059 E
52.	SVG94	31-12-2014		17.0945 N	75.7117 E
53.	SVG96	01-05-2014	Feeder-04	17.0976 N	75.7314 E
54.	SVG97	02-06-2014		17.0918 N	75.7302 E

55.	SVG101	10-05-2014		17.1176 N	75.706 E
56.	SVG103	03-05-2014		17.0897 N	75.697 E
57.	SVG105	10-05-2014		17.1145 N	75.7027 E
58.	SVG106	30-04-2014		17.0986 N	75.6774 E
59.	SVG107	30-04-2014		17.097 N	75.678 E
60.	SVG108	29-04-2014		17.0953 N	75.6778 E
61.	SVG109	29-04-2014		17.0937 N	75.6776 E
62.	SVG110	29-04-2014		17.0921 N	75.6772 E
63.	SVG111	03-05-2014		17.0906 N	75.6761 E
64.	SVG112	02-05-2014		17.089 N	75.6753 E
65.	SVG118	11-05-2014		17.0872 N	75.6758 E
66.	SVG119	03-05-2014		17.0814 N	75.6768 E
67.	SVG120	29-04-2014		17.0798 N	75.678 E
68.	SVG122	02-05-2014		17.0903 N	75.6907 E
69.	SVG123	03-05-2014		17.0879 N	75.6967 E
70.	SVG125	23-08-2014		17.1163 N	75.7161 E
71.	SVG126	05-05-2014		17.0909 N	75.7251 E
72.	SVG128	02-06-2014		17.0795 N	75.6956 E
73.	SVG129	02-06-2014		17.0766 N	75.6981 E
74.	SVG131	02-06-2014	Feeder-05	17.0736 N	75.7047 E
75.	SVG132	02-06-2014		17.0716 N	75.7049 E
76.	SVG134	02-06-2014		17.081 N	75.7148 E
77.	SVG135	02-06-2014		17.0787 N	75.7162 E
78.	SVG136	02-06-2014		17.0755 N	75.717 E
79.	SVG137	02-06-2014		17.0737 N	75.7168 E
80.	SVG138	21-05-2014		17.0859 N	75.7285 E
81.	SVG139	11-08-2014		17.085 N	75.7305 E

82.	SVG140	07-08-2014		17.0814 N	75.7319 E
83.	SVG141	06-08-2014		17.0793 N	75.7336 E
84.	SVG143	06-08-2014		17.0744 N	75.7359 E
85.	SVG144	06-08-2014		17.0722 N	75.7368 E
86.	SVG145	06-08-2014		17.0701 N	75.7373 E
87.	SVG147	06-08-2014		17.0636 N	75.74 E
88.	SVG148	06-08-2014		17.0654 N	75.7397 E
89.	SVG150	02-06-2014		17.0827 N	75.7137 E
90.	SVG153	06-08-2014		17.0691 N	75.7396 E
91.	SVG154	29-04-2014		17.1383 N	75.7416 E
92.	SVG155	29-04-2014		17.1144 N	75.7334 E
93.	SVG156	29-04-2014		17.1128 N	75.7333 E
94.	SVG157	03-05-2014		17.1044 N	75.7275 E
95.	SVG165	03-05-2014		17.0963 N	75.7114 E
96.	SVG166	02-06-2014		17.094 N	75.7293 E
97.	SVG168	02-06-2014		17.0753 N	75.692 E
98.	SVG170	01-05-2014		17.1415 N	75.7129 E
99.	SVG172	31-12-2014		17.0956 N	75.7194 E
100.	SVG173	11-12-2014	Feeder-06	17.0681 N	75.7294 E
101.	SVG174	03-01-2015		17.0792 N	75.7598 E
102.	SVG175	31-12-2014		17.0763 N	75.76 E
103.	SVG176	31-12-2014		17.0777 N	75.7537 E
104.	SVG177	31-12-2014		17.0747 N	75.7526 E
105.	SVG178	06-08-2014		17.0669 N	75.7516 E
106.	SVG179	02-01-2015		17.0635 N	75.7549 E
107.	SVG180	31-12-2014		17.0616 N	75.7544 E
108.	SVG193	10-08-2014		17.0623 N	75.7469 E

109.	SVG194	12-08-2014		17.064 N	75.7469 E
110.	SVG195	06-08-2014		17.0707 N	75.762 E
111.	SVG196	06-08-2014		17.0725 N	75.7623 E
112.	SVG197	31-12-2014		17.1227 N	75.7171 E

The power rating of the WTGs has been verified with the name plates as well as with the technical specification's WTGs submitted to VKU Assessment Team by PP and also cross checked from the technical manual of the Manufactures/32/. The same could be verified from the VCS Validation Report/4/ Assessment team confirms that the technical parameters are consistent with the registered VCS PD / 3/. The major technical specifications are as follows:

Table no 10: Technical specifications of generator (WTGs):

ReGen's wind energy technology by implementing VENSYS 87 model 1500kW WTGs.

VENSYS 87 (Regen Powertech)	
POWER	
Rated power	1500 kW
Cut-in wind speed	3 m/s
Rated Wind Speed	13 m/s
Cut-out wind speed	22 m/s
Survival wind speed	52.5 m/s
Generator	Variable Speed, Multi-pole Synchronous with Permanent Magnet Excitation
ROTOR	
Diameter	87
Swept area	5942 sq. m
Speed range (variable)	9 to 17.3 rpm
TOWER AND FOUNDATION	
Hub height	85 m
Design	Tubular, Four sections
Foundation type	Floating foundation
CONTROL AND SAFETY SYSTEMS	
Control of output	Pitch Regulation

Speed control	Variable, Micro-controller based
Low Voltage Ride Through (LVRT)	3 seconds
Primary brake system	Aerodynamic Brake, Single Pitch Control/triple redundant
Pitch System	Electromechanical, Maintenance Free Toothed Belt Drive (Patented)
Remote Monitoring	VPN, Visualization via web-browser
TYPE CLASSES	
Wind turbine type class	GL III B
Blade	
Blade model	LM 42.1 P2
Make	LM
Length	42.1 Mtr.
Generator	
Capacity	1.5MW
Rated Voltage	690V
Generator type	Direct Drive synchronous PM Excited
Number of pole	88
Winding type	LAP winding
Rated RPM	17.3
No. of phases	2x3 phases AC Y
Insulation class	F
Protection Class	IP 23
Cooling system	Passive Air cooling
Converter/Grid output	
Rated output Voltage	620V
Rated output frequency	50Hz
Rated current	1450A
Phase	3 phase star connection

Gamesa wind energy technology by implementing G58 model 850kW WTGs.

Model: Gamesa G58	
Rated power	0.85 MW
Startup WS (Wind speed)	3.0 m/s
Rated wind speed	12 m/s
Cut-out wind speed	21.0 m/s
Rotor	
Diameter	58 m
Swept area:	2,642m²
Number of blades	3
Rotor speed, max	30.8 U/min
Tipspeed	94 m/s
Power density	321.7 W/m²
Power density	3.1 m²/kW

The assessment team confirmed through remote site visit assessment with PP representative that there is no proposed or actual change to the project design during this monitoring period. It was observed that the monitoring plan was implemented as per the registered VCS PD/3/ and applied methodology ACM0002, Version 16.0 /13/. The organizational role and responsibility as mentioned in the registered VCS PD/3/ is followed onsite. Meters are calibrated as per calibration frequency in registered PD/3/. All the emergency preparedness as mentioned in MR/1/ are followed onsite and no discrepancies were found regarding the same.
The daily operation of the Wind Turbine Generators (WTGs) is overseen by the operator on-site. The operator reports to the Assistant Engineer (AE) - Wind Farm, who is tasked with gathering necessary data from the operator. The AE - Wind Farm records daily generation data for each service connection point and communicates the cumulative generation figures to the management.
The VCS Project Coordinator has the responsibility of annually assessing the achieved emission reduction and documenting these results. This coordination ensures that the project maintains a systematic record of its emissions reductions for compliance and reporting purposes.

Assessment team concludes the following:

a) There are no material discrepancies between project implementation and the project description provided in the registered PD/3/ However, PP has requested deviations which is mentioned in section 3.3 of this report. It is important to note that these deviations does not affect project design and additionality of project activity.

b) 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.

c) There are no material discrepancies between the actual monitoring system, and the monitoring plan set out in the first crediting period of project description/3/ and the applied methodology/13/.

d) Materiality threshold applied is **01%** as per 4.1.10 of VCS Standard v4.5, It was concluded that the materiality threshold applicable to the project activity based on the type of project i.e., Project is 01%. This effectively means that there is uncertainty inherent in the estimation of emission reduction of 01%. This is consistent with the section 4.1.10 of VCS standard v4.5 which is equal to **3,690.34 tCO_2e**

e) 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/30/.

f) Complying with clause 3.24.5 of the VCS Standard version 4.5 Assessment Team confirms that the project has not received or pursued any other form of environmental credit, nor has it become eligible to do so since VCS Validation/4/ or previous VCS Verification/5/

g) The project Activity is a wind power project and does not involve any supply chain in the project such as manufacturers, wholesalers, distributers and retailers. So, no indirect upstream and downstream GHG emissions are involved in the project activity. Thus, the **Scope 3 emissions are not applicable in this project activity**.

h) The project is registered under VCS[4] & REC[5]. PP has claimed REC benefits for capacity 45 MW [for 30 WTGs of Vagrai project site with rated capacity 1.5 MW each (The HTSC numbers DRA 01, 03, 04, 05, 06, 07, 08, 09, 12, 13, 15, 17, 18, 21, 22, 23, 24, 25, 26, 27, 31, 32, 33, 43, 44, 46, 47, 48, 49, 54)] out of total project capacity 233.1 MW. PP has submitted the REC Certificate along with the declaration/30/stating that the project is seeking to get REC for only 45 MW out of 233.1 MW. PP has stated that GHG emission reduction for 188.1 MW will be claimed from VCS for the current monitoring period. Audit team has checked the REC/16/ Mechanism database of India and I-REC/17/ mechanism database found that the project activity is accredited / registered under only REC mechanism and not in I-REC mechanism which was verified from the (Renewable Energy Certificate Registry of India) REC/16/ (International-Renewable Energy Certificate Standard Standard) I-REC/17/ website. Verification team performed similar comprehensive search across the GHG programs including GS Registry, CDM, GCC, UCR & CR-I using matching project titles and capacity, as well as Project Proponent details. This diligent examination did not yield any instances of the project being

[4] https://registry.verra.org/app/projectDetail/VCS/1521

[5] Renewable Energy Certificate Registry of India

registered under any of the aforementioned, however PP has submitted the declaration/30/ for the same.

i) 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 remote site visit Assessment/38/ and found all the indicators to be effective and applicable for the project activity.

As per the VCS Standard Version 4.5[6] Page no 79, Appendix 03: Document History and Effective dates, For V4.2, serial number 04 states that "it is required by project proponents to demonstrate contributions to a minimum of three SDGs in all monitoring reports verified after the effective date. Effective immediately for all projects that request registration on or after 20-January-2023. Projects that request registration before 20-January-2023 shall demonstrate contributions to at least three SDGs by 20-January-2025". This is project's eighth periodic verification of first crediting period for the Monitoring Period 01-April-2022 to 30-June-2023 (Inclusive of both start and end dates), Since this project is registered before 20-January-2023, so the Project Proponent (PP) must demonstrate contributions to at least three SDGs by 20-January-2025.

For the current monitoring period, the PP is voluntarily showing contributions to three SDGs, as indicated below,

- **SDG no 7.2: (Renewable energy share in the total final energy consumption)**
- **SDG no 8.6 (8.6.1: Proportion of youth (aged 15-24) not in education, employment or training)**
- **SDG no 13.2 (13.2.1: Tonnes of greenhouse gas emissions avoided or removed)**

The project activity has implemented activities that results in 3 SDG Contributions; 7.2, 8.5 & 13.2

1. **7.2 i.e. (Renewable energy share in the total final energy consumption)** As a part of this project activity lifetime (566,713 + 714,121 + 496,789 + 171,511 + 312,899 + 245,786 + 13,130 + 375,917.13[7] = 2,896,866.13) MWh Net renewable electricity has been exported to Indian grid that helps to strengthen the renewable energy share in the energy mix. VKU has referred previous verification reports /5/ monitoring report for current monitoring period/1/ & emission reduction sheet/2/ which were cross checked from JMRs/27/ & Invoices/28/ submitted to the VKU Assessment/Verification Team for current monitoring period and thus found the above claimed renewable electricity supplied to Indian grid is correct.

[6] https://verra.org/documents/vcs-standard-v4-5/

[7] Contribution of Renewable energy share in the total final energy consumption to current MP i.e., 8th Verification Period.

2. **SDG i.e., 8.6.1: Proportion of youth (aged 15-24) not in education, employment or training)**: Due to installation of the project activity PP has provided direct employment to 94 people in project implemented area and provide 03 Trainings. VKU Assessment/Verification Team has referred the employment records and training records submitted by the PP and focused group discussions/interviews/39/. VKU Assessment Team now conclude that this SDG benefit found to be correct by VKU.
3. **13.0 i.e. (Tonnes of greenhouse gas emissions avoided or removed)** Due to installation of this project activity i.e., Wind Turbine generators (WTGs) PP has prevented the release of (556,341 + 701,051 + 487,697 + 168,371 + 307,153 + 241,287 + 12,889 + 369,034[8] =2,843,823) tCO_2 into the atmosphere till the end of current monitoring period i.e., 01-April-2022 to 30-June-2023 (Inclusive of both the days). It proves that the project generates eco-friendly, GHG free power which contributes to sustainable development of the region. VKU Assessment/Verification Team has referred previous verification reports /5/ monitoring report for current monitoring period/1/ & emission reduction sheet/2/ which were cross checked from JMRs/27/& Invoices/28/ submitted. VKU Assessment Team now conclude that the above claimed greenhouse gas emissions avoided or removal is correct for current monitoring period.

Since the project is continuation of activity as per the registered PD, it is a regulatory surplus activity. The green energy target of the Govt of India does not include green energy generated from wind turbines from private parties. This was assessed as the TL is an expert of local regulations and statutes of country India and thus in view of the information as verified above the VKU assessment team is able to conclude that the project has been implemented as described in the registered VCS Project Description version 02 dated 10-February-2016/3/and MR /1/.

All the above stated information was verified by VKU assessment team during remote site visit/38/ at the project implemented site and also by interviewing the site personnel and by conducting focussed group discussion with them /39/.

There are no potential harmful socio-economic and environmental effects in the project activities. The net impact under environmental pollution category is positive as all necessary abatement measures are adopted. The project activity does not have any major adverse impacts on environment during its construction or operational phase. All necessary measures to handle impacts were found in place, which was confirmed during remote site visit assessment /38/.

As per the section 1.1 of the MR/01/, PP has provided the audit history of 1st Crediting period as below:

Audit Type	GHG Programme	Monitoring Period	VVB Name	Number of years

[8] Contribution of Tonnes of greenhouse gas emissions avoided or removed to current MP i.e., 8th Verification Period.

		(Inclusive of both dates)		
Validation	VCS	21-February-2014 to 20-February-2024	EPIC Sustainability Services Private Limited	10 Year, 00 months, 00 Day
1st Verification	VCS	21-February-2014 to 01-April-2016	EPIC Sustainability Services Private Limited	02 Years, 01 Month, 12 Days
2nd Verification	VCS	02-April-2016 to 01-May-2018	LGAI Technological Center S.A. (Applus+ Certification)	02 Years, 01 Month, 00 Days
3rd Verification	VCS	02-May-2018 to 01-August 2019	LGAI Technological Center S.A. (Applus+ Certification)	01 Year, 03 months, 00 Days
4th Verification	VCS	02-August-2019 to 31-March-2020	LGAI Technological Center S.A. (Applus+ Certification)	00 Year, 07 Months, 30 Days
5th Verification	VCS	01-April -2020 to 31-May-2021	KBS Certification Services Pvt. Ltd.	01 Year, 02 Months, 00 Days
6th Verification	VCS	01-June-2021 to 28-February-2022	LGAI Technological Center S.A. (Applus+ Certification)	00 Year, 09 Months, 00 Days
7th Verification	VCS	01-March-2022 to 31-March-2022b	LGAI Technological Center S.A. (Applus+ Certification)	00 Year, 01 Month, 00 Days
8th Verification (Current Monitoring Period)	VCS	01-April-2022 to 30-June-2023 (Current Monitoring Period)	VKU Certification Pvt. Ltd.	01 Year, 03 months, 00 Days
Total	VCS	**21-February-2014 to 30-June-2023**	———	**09 Years, 04 Months, 10 Days**

This has been checked by the verification team through validation and previous verification reports 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 involves implementation of WTGs as a voluntary measure to strengthen the national grid of India through exploitation of wind power generation potential available to India. Project is in accordance with the Ministry of Environment, Forest and Climate Change (MoEF&CC)

Notification dated 14-September-2006 (S.O. 1533(E)[9], and exempt from Environmental Impact Assessment (EIA) submission. Since the project involves wind-based activities, it is not required to obtain clearance from the Pollution Control Board.

Throughout the monitoring period, the project operation had no negative impacts on air, water, soil quality, surroundings, or socio-economic factors. Moreover, there were no anticipated adverse environmental or socio-economic effects, eliminating the need for mitigation measures. The use of wind energy as a renewable resource not only preserved natural resources but also promoted environmental well-being without any detrimental consequences for the local environment.

Additionally, the Monitoring Report MR/1/ explicitly confirmed that the project proponent (PP) ensured that the operational and maintenance phases had no adverse effects on air, water, or ecological aspects. The project's commitment to eco-friendly power generation has resulted in sustainable development within the region, as lowlighted in MR/1/.

Furthermore, the project activity has positively impacted the local community by creating job opportunities during construction and operation phases, as verified through remote site visit and by interviews of persons present at the site by the VKU Assessment Team /39/.

4.2.2 Local Stakeholder Consultation

The project i.e., VCS 1521: "Wind Based Power Generation by Mytrah Energy (India) Limited (EKIESL-VCS-January-16-01)." has undergone stakeholder consultation which is in compliance with the Verified Carbon Standard (VCS) and local regulations. Various stakeholder groups, including Representatives from PP, Representatives from technology suppliers, local villagers were engaged through multiple phases using methods such as focus group discussions and social mapping.

The stakeholder meeting was organized at all of the three locations i.e., Burgula, Salvasang and Vagarai on the dates given below:

Tamil Nadu	
Project Site	**Vagarai**
Date of Invitation	Meeting date
10-October-2012	23-October-2012
	24-October-2012
	25-October-2012
Andhra Pradesh	

[9] http://www.environmentwb.gov.in/pdf/EIA%20Notification,%202006.pdf

Project Site	Burgula
Date of Invitation	Meeting date
12-April-2013	22-April-2013
Karnataka	
Project Site	Salvasang
Date of Invitation	Meeting date
11-April-2013	21-April-2013

A meeting was organized for stakeholders at the wind farm site office, and they were invited through public notices with sufficient notice to encourage their participation. As stated in the MR/1/ and verified through remote site interviews with site personnel, it was evident that local stakeholders recognized and appreciated the positive impacts of the wind power project. These positive impacts included increased employment opportunities, enhanced land value, and improved infrastructure in the region. The stakeholders expressed gratitude for the project proponent's efforts towards environmental welfare and acknowledged the project's contribution in generating employment locally.

To ensure open communication and address any concerns, a complaint register was placed at site for stakeholders to lodge their complaints. However, during the monitoring period, no complaints were received, as confirmed by the VKU assessment team during their remote site visit. Additionally, the VKU verification team did not come across any negative comments or feedback from local stakeholders during their remote site assessment, as summarized in section 2.2 of MR/1/.

During the remote site interviews, the verification team specifically examined the compilation of inputs and feedback from stakeholders, and they found that the project proponent had appropriately considered and accounted for them. As a result, the verification team concluded that the ongoing communication with local stakeholders complies with the established guidelines defined in section 3.18, clause 3.18.3, 3.18.4 of the VCS Standard version 4.5/10/. The project proponent's efforts in engaging with stakeholders have been deemed suitable and in line with the prescribed requirements.

The local stakeholders interviewed in Interviews section 2.3 of this report confirmed the same. Hence confirming that the project activity does not have a negative impact on the surrounding environment, thus promoting environmental wellbeing, hence complying with the guidelines set in section 3.19 of VCS standard version 4.5/10/.

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 equations and choices provided in the methodology /10/ and all other methodological tools are correctly quoted in the MR /1/. The emission reductions of the project activity are calculated using the formulae mentioned in the applied methodologies i.e., ACM0002 Version 16.0 /13/. The verification team has reviewed the emission reduction spread sheets (ER sheets) /2/ and checked all the formulae and found they are correct and are in accordance with the monitoring plan of the PD /03/ and the applied monitoring methodology /13/.

The project monitoring plan involves only 01 parameter to be monitored;

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

Monitored parameters are according to the monitoring plan and monitoring report/1/.

The parameter $EG_{PJ,y}$ value is sourced from Certified Joint Meter Reading (JMRs)/Credit note/Form-B/27/, Proper calibrated meters of 0.2s (at Savalsang and Burgula project site) & 0.5s (at Vagarai project site) accuracy class installed at each feeder or WTG and regularly monitor the Net electricity generated by WTGs, generation mentioned in ER sheet/2/ prepared by PP has been reviewed by assessment team thoroughly by cross checking the values of JMRs/Credit Notes/B-Forms/27/ submitted by PP and found correct including all the formulae and conversions and aggregations.

The daily generation schedule is prepared by the plant team, and the Power is sold to the Respective State Electricity Board according to the (PPA/25/) and used for captive consumption. PP has signed three operations and maintenance agreements with three different agencies which is elaborated below. The respective O & M is responsible for monitoring the generation of the Wind Turbine Generators (WTGs) daily and maintains a log book recording daily generation details for each WTG within the project, as measured at the wind farm. The VKU assessment team verified these records during their remote site visit /38/.

S.No.	Project entity	Site	State	O and M entity	State utility
1	Mytrah Vayu (Krishna) Pvt Ltd	Savalsung	Karnataka	Siemens Gamesa Renewable Power Private Limited	Bangalore Electricity Supply company Limited
2	Mytrah Vayu (Manjira) Private Limited	Vagrai	Tamil Nadu	Regen Powertech Private Limited	Central Power Distribution company of Andhra Pradesh
3	Mytrah Vayu (Krishna) Pvt Ltd	Burgula	Andhra Pradesh	Suzlon Global services Pvt ltd	Tamil Nadu Electricity Board

For Savalsang & Burgula project sites the electricity generated by both the project activity WTGs and non-project WTGs is metered at a feeder-wise common metering point. This metering point comprises a main meter and a check meter, both having an accuracy of 0.2s. These meters measure parameters such as export and import for all connected WTGs. For Vagrai project site the electricity generated individual WTG of the project is measured at individual metering point located near to the individual WTG. This metering point comprises a main meter and a check meter, both having an accuracy of 0.5s. These meters measure parameters such as export and import for all connected WTGs. As specified in the registered VCS Project Design Document/3/ and MR/1/, the net electricity supplied to the grid is calculated by summing up the net electricity export figures of individual WTGs. The difference is then multiplied by the applicable meter multiplication factor.

The monitoring and measurement of electricity at the project metering point are carried out continuously, while the recording is done on a monthly basis through Joint Meter Readings/Credit Notes/Form-B, performed jointly by representatives of the State Utility and the project proponent (PP).

The monitoring plan outline in the officially registered VCS Project Design (PD) version 02, dated 10-February-2016, 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 (MR/1/). The reductions in emissions are calculated based on the net electricity generated by the project and subsequently supplied to the grid.

The project proponent (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 (Wind) plant/unit to the grid in year y" which were used in deriving the greenhouse gas (GHG) emission reduction, have been found to be well correlated between the data sets and the Emission Reduction (ER) spreadsheet provided by the PP.

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

Table No: 13 Data and Parameters Available at Validation or Ex-ante parameters:

Parameter	Unit	Description	Value
$EF_{grid,CM,y}$	tCO_2/MWh	Combined Margin CO_2 Emission Factor in year y	**0.9817 tCO_2/MWh** is consistent with the registered VCS PD Version 02 dated 10-February-2016/3/ As per CEA database, Version 10, December-2014/22/ Combined Margin Emission Factor (**$EF_{grid,CM,y}$**) is

			calculated as the weighted average of Operating Margin Emission Factor ($EF_{grid,OM,y}$) and Build Margin Emission Factor ($EF_{grid,BM,y}$) and tool to calculate the emission factor for an electricity system Version 7.0.
$EF_{grid,OM,y}$	tCO_2/MWh	Simple operating margin emission factor of Indian Grid	**0.9887 tCO_2/MWh** is consistent with the registered VCS PD Version 02 dated 10-February-2016/3/ Calculated from CEA database, Version 10, December-2014/22/
$EF_{grid,BM,y}$	tCO_2/MWh	Combined Margin CO_2 Emission Factor in year y	**0.9609 tCO_2/MWh** is consistent with the registered VCS PD Version 02 dated 10-February-2016/3/ Calculated from CEA database, Version 10, December-2014/22/

The verification of each monitoring parameter has been discussed later in section 4.5.

According to applied methodology ACM0002; Version 16.0 /13/ the emissions are calculated as below:

According to applicable methodology ACM0002; Version 16.0[10] under section 5 of Baseline Methodology Procedure with further description under section 5.4-page 12 about Project emissions & under section 5.6-page 18 about Leakage emissions that since project activity is a Wind power project and no other kind of fossil fuel has been used in the current monitoring period on site thus no leakage emission is considered according to the methodology used & since this is a renewable project activity no project emissions from the project activity are considered.

Leakage emissions: $LE_y = 0\ tCO_2$

Project Emissions: $PE_y = 0\ tCO_2$

GHG Calculations:

The calculation of emission reduction has been done in accordance with the applied methodology used i.e., ACM0002 Version 16.0 /13/. As per the applied methodology, the values of project emission and leakages are considered as zero for the project activity. The equation used for calculation of baseline emission is given below:

[10] 0X6IERWMG92J7V3B8OTKFSL1QZH5PA (unfccc.int)

The calculation of **EG $_{PJ,y}$** for Greenfield plants ..... Equation (8)

$EG_{PJ,y} = EG_{facility,y}$		
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)
$EG_{facility,y}$	=	Quantity of Net Electricity exported to the grid by the project WTGs to the grid during the year y (MWh/yr)

Baseline emissions are calculated as follows: ..... Equation (7)

Where,

$BE_y = EG_{PJ,y} X EF_{grid,CM,y}$		
BE_y	=	Baseline Emissions (tCO_2/year)
$EG_{PJ,y}$	=	Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr)
$EF_{grid,CM,y}$	=	Combined margin CO_2 emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system" (t CO2/MWh)

As per calculation method in section 3.4 of registered PD Version 02 dated 10-February-2016 and calculation performed in section 5.4 of MR and ER sheet submitted by PP.

Estimated Emission Reduction as in VCS PD for the equivalent period of the current Monitoring period, 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 PD	**479,448** (tCO_2e)
Estimated Emission Reduction as in VCS PD for the equivalent period of the current Monitoring period	**=** (Annual Estimated GHG emission reductions as per revised VCS PD/Total days in a year) *days in current monitoring period **= (479,448/365) * 456 = 598,982 (tCO_2e)**
Actual Emission Reduction as per MR and ER during current Monitoring period	**369,034** (tCO_2e)
Percent difference	**-38.39%** Lower than the estimated

Section 5.4 of the Monitoring Report (MR/1/) presents detailed calculations, which have been cross-checked and verified through the compiled Emission Reduction (ER/2/) spreadsheet. The verification team ensured the accuracy of these calculations by referencing the Joint Meter Readings/Credit Notes/B-Forms (JMRs/27/) and cross-checking the data with invoices /28/.

PP has submitted all the evidences like JMRs/Form-B/27/ and Invoices /28/ to VKU Assessment/Verification Team for verification and assessment of ER Sheet/2/

Hence VKU Assessment/Verification 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 16.0" /13/.

4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

When verifying the reported emission reduction, VKU ensured that there was a clear audit trail that contained the evidence and records that validate the stated figures. All source documents that form the basis for assumptions and other information underlying the GHG data are shown above.

When assessing the audit trails, VKU also examined:

1. Whether sufficient evidence was available, both in terms of frequency and in covering the full monitoring period
2. The source and nature of the evidence
3. If comparable information was available from sources other than that used in the monitoring report/1/, VKU cross-checked the monitoring report against the other sources to confirm that the stated figures were correct. The sources and the data referenced are shown in Section 2.2 above.

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.

There is only one parameter to be monitored;

1) **$EG_{PJ,y}$** (Quantity of net electricity generation supplied by the project (Wind) plant/unit to the grid in year y);

The below table describe how the parameter **$EG_{PJ,y}$** (Quantity of net electricity generation supplied by the project (Wind) plant/unit to the grid in year y), that is to be measured according to the monitoring plan, has been verified to confirm that the actual monitoring complies with the monitoring plan, monitoring data has been thoroughly assessed and that the calibration requirements are met:-

Table No: 12 Assessment of Parameter $EG_{PJ,y}$ (Quantity of net electricity generation supplied by the project (Wind) plant/unit to the grid in year y)

Parameter	$EG_{PJ,y}$ (Quantity of net electricity generation supplied by the project (Wind) plant/unit to the grid in year y)	
Means of verification	**Criteria/Requirements**	**Assessment/Observation**
	Measuring /Reading /Recording frequency	The parameter is calculated parameter and recorded viz Continuous monitoring and hourly measurement. The quantity of net electricity exported to the grid by WTGs is recorded with the aid of energy meter for each feeder or WTGs in MWh for cross check of import and export electricity. Quantity of net electricity generation supplied by the project (Wind) plant/unit to the grid in year y **$EG_{PJ,y} = EG_{BLKNy} + EG_{BLTNy} + EG_{BLAPy}$** Where, **$EG_{BLKNy}$** = $EG_{Export,KN}$ – 115%*EG_{Import} – Transmission Loss ($T_{E,KN}$) **EG_{BLTNy}** = EG_{Export} – EG_{Import} **EG_{BLAPy}** = EG_{Export} – EG_{Import} Continuous monitoring, hourly measurement and at least monthly recording for parameters EG_{Export} & EG_{Import} of each site.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/3/ and monitoring methodology/13/. Also, in current monitoring period there is no deviation from the stated procedures in the registered monitoring plan. This was verified by assessment team during desk review and by Team Leader during remote site visit assessment and interviews/39/ with site personnel.
	Monitoring equipment	No monitoring equipment is used as this parameter is calculated.

			However, the parameter **EG_{BLKNy}**, **EG_{BLTNy}** and **EG_{BLAPy}** is calculated using measured values (EG_{Export} and EG_{Import}), are continuously monitored, hourly measured and monthly recorded. Monitoring Equipment used to monitor these parameters (EG_{Export} and EG_{Import}) is Tri vector meter. Type of meter: Static type meter (Main & Check). Both are Bidirectional meters.
		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 used to measure the input values (EG_{Export} and EG_{Import}) which is used to calculate is 0.2s for **EG_{BLKNy}** and **EG_{BLAPy}**, and 0.5s for **EG_{BLTNy}.** which is as per the registered VCS PD /01/ which is as per the norm defined in PPA/25/.
		Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes, the accuracy is valid for the entire current monitoring period i.e., 01-April-2022 to 30-June-2023 (Inclusive of both the days). There a two different accuracy levels in this project activity. **0.2s** Accuracy class is applied for measuring the parameter EG_{Export} and EG_{Import} for the Savalsang and Burgula project sites located in State kanataka and Andhra Pradesh respectively and, **0.5s** Accuracy class is applied for measuring the parameter EG_{Export} and EG_{Import} for the Vagrai project site located in State Tamil Nadu.
		Calibration frequency /interval:	The Calibration frequency /interval of the monitoring equipment used to measure the input values (EG_{Export} and EG_{Import}), which is used to

			calculate **EG_{BLKNy}**, **EG_{BLTNy}**, **EG_{BLAPy}** and **EG_{PJy}** is once in five years, which is as per section 4.3 of the registered PD/01/ which is as per the norm defined in PPA /25/.
		Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Yes, it is in line with the monitoring plan & registered methodology. Outlined in the registered VCS PD Version 02 dated 10-February-2016/3/ The calibration frequency is once in five years as per PPA/25/. Thus, validity of the calibration is considered for five years which is also in accordance with the national standards i.e., Clause 18 of Central Electricity Authority (Installation and Operation of Meters) 2018 /24/
		Is the calibration of measuring equipment carried out by an accredited person or institution?	Since this is a calculated value, this section is not applicable. However, for monitoring equipment used to measure the input values (EG_{Export} and EG_{Import}), which is used to calculate EG_{BLKNy}, EG_{BLTNy}, EG_{BLAPy} and EG_{PJy}: **Yes**, **for Savalsang site** (Karnataka) Calibration of the measuring equipment's is carried out by **DISCOM i.e., Hubli Electricity Supply Company Limited. (Government of Karnataka).** **for Burgula site** (Andhra Pradesh) Calibration of the measuring equipment's is carried out **by Yathva Energy Solutions Pvt.Ltd (Certificate No. TC-7868) under the purview of State DISCOM.** **for Vagrai** site (Tamil Nadu) meters was initially calibrated at the time of installation by **Tamil Nadu Electricity Board (TNEB).**
		Is(are) calibration(s) valid for the whole reporting period?	Since this is a calculated value, this section is not applicable.

			However, for monitoring equipment used to measure the input values (EG_{Export} and EG_{Import}), which is used to calculate EG_{BLKNy}, EG_{BLTNy}, EG_{BLAPy} and EG_{PJy}: **No,** **for Savalsang site** (Karnataka) Calibration of the measuring equipment's is carried out by DISCOM i.e., Hubli Electricity Supply Company Limited. (Government of Karnataka) and it is valid for the whole reporting period. i.e., **01-April-2022 to 30-June-2023 (Inclusive of both the days).** **for Burgula site** (Andhra Pradesh) Calibration of the measuring equipment's is carried out by Yathva Energy Solutions Pvt.Ltd (Certificate No. TC-7868) under the purview of State DISCOM and it is valid for the whole reporting period. i.e., **01-April-2022 to 30-June-2023 (Inclusive of both the days).** **for Vagrai site** (Tamil Nadu) meters was initially calibrated at the time of installation by **Tamil** Nadu Electricity Board (TNEB) and it is valid for April-2022. For the remaining period (14 Months i.e., from May-2022 to June-2023) of current monitoring period PP has applied the correction factor of +0.5% on the Import value and -0.5% on the Export Values which is align with section 4.3 of registered VCS PD Version 2 dated 10-February-2016 and section 3.4.2 of VCS VV Manual Version 3.2/11/.
		Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Since this is a calculated value, this section is not applicable. However, for monitoring equipment used to measure the input values (EG_{Export} and EG_{Import}), which is used to calculate EG_{BLKNy}, EG_{BLTNy}, EG_{BLAPy} and EG_{PJy}: **For Savalsang site** (Karnataka): **Yes**, Calibration of the measuring equipment's is carried out by

			DISCOM i.e., Hubli Electricity Supply Company Limited. (Government of Karnataka) appropriately for current monitoring as per the registered monitoring plan and VCS VVS manual version 3.2/11/& as per PPA/25/. **For Burgula site** (Andhra Pradesh): **Yes,** Calibration of the measuring equipment's is carried out by Yathva Energy Solutions Pvt.Ltd (Certificate No. TC-7868) under the purview of State DISCOM appropriately for current monitoring as per the registered monitoring plan and VCS VVS manual version 3.2/11/& as per PPA/25/. **For Vagrai site** (Tamil Nadu): **No,** meters were initially calibrated at the time of installation by **Tamil Nadu Electricity Board (TNEB) appropriately as per the registered monitoring plan and VCS VVS manual version 3.2/11/& as per PPA/24/ and it is valid till April-2022. For the remaining period (14 Months i.e., from May-2022 to June-2023) of current monitoring period PP has applied the correction factor of +0.5% on the Import value and -0.5% on the Export Values which is align with section 4.3 of registered VCS PD Version 2 dated 10-February-2016 and section 3.4.2 of VCS VV Manual Version 3.2/11/.**
		How were the values in the monitoring report verified?	Cumulative value of **$EG_{PJ,y}$** for entire monitoring period 01-April-2022 to 30-June-2023 (inclusive of both dates) is reported in the monitoring report/1/, and monthly values in the ER calculation sheet/2/ in MWh. The monthly values were verified from the JMRs/Credit Notes/B-Forms/27/ and cross checked from invoices/28/ thus found to be consistent. Value of this parameter for the current monitoring period was verified as **375,917.13 MWh**.
		If applicable, has the reported data been cross-	The monthly reported values of **$EG_{PJ,y}$** in JMRs/27/ were further cross checked with the

		checked with other available data?	monthly invoices /28/ raised by the PP to State Electricity which is found to be consistent with the PPA/25/
		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/39/ with the project stakeholder of the project activity confirms that the necessary QA/QC procedures are in place and the data management system is effective and reliable. Every month these meter readings will be recorded by respective State Electricity Board representative and plant personnel. The meters at the substation will be two-way meters and will be in the custody of DISCOM. The quantity of net electricity supplied is cross-verified from the invoice raised on respective DISCOM by the project proponent
		In case project proponents have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	No such issues.
Findings	CL#02 & CAR#02 were raised and resolved		
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan. The emission reduction calculation for the project activity is estimated based on the electricity supplied by the project. Since 100% data was verified, the team can ascertain that the values taken for emission reduction calculation are free from material errors.		

Monitoring Plan for Savalsang Project site.

The voltage is generated at 690V and stepped up to 33 KV and further connected. The voltage is stepped up to 220 KV by transformer of 33KV/220KV 100 MVA transformer and supplied to grid. The main parameter ($EG_{PJ,y}$) to be monitored for a wind project is the Quantity of net electricity supplied to the grid as a result of the implementation of the VCS project activity in year y. The parameter is measured as electricity export, import and transmission loss, which was issued by Bangalore Electricity Supply Company Limited (BESCOM) officials and recorded in the B-Form and issued monthly to the project proponent. These monthly reports for the entire monitoring period form the basis to report the emission reductions achieved due to the project activity. The project proponent in turn raises the invoices to the BESCOM for the electricity supplied to the grid. The electricity is measured by two-way energy meters of an accuracy class of 0.2s which are calibrated periodically by officials from the BESCOM/KPTCL for billing purpose the value of energy meter installed at 33 kV metering point is used whereas for calculation of transmission loss, energy export Reading at bulk meter installed at high voltage side of transformer of the receiving station 220kV is used.

The procedure for calculation of transmission loss as given in the PPA is set-out below:

Z = ((X1+X2+X3...+Xn)-Y)/((X1+X2+X3...+Xn)) x 100

Z = Percentage transmission loss for export incurred in transmission line between the meter located at 33 kV metering point and the meters located at bulk 220 metering point (bulk meter: main and check) high voltage side of receiving sub-station.

Xi = Energy Export Reading of energy meter installed at 33 kV metering point

Y = Energy Export Reading at bulk meter installed at high voltage side of transformer of the receiving station 220kV.

X1, X2, X3, Xn are the meters that are installed at 33kV metering point and are connected to the receiving substation by internally connected lines to the receiving station.

The Export Reading Xi is adjusted for transmission loss that is determined by the state utility and is applied directly to the JMR (Form B) taken at 33 kV metering point. This can be checked from the JMR signed jointly by the representatives of PP and the state utility.

Transmission Loss in Export (TE) = Percentage Transmission Loss (Z) * Energy Export at 33kV metering point ($EG_{Export,KN}$)

Empirical Formula for Energy Export after adjustment of transmission loss (Equation 1)

Net Energy Export after adjustment of transmission loss = $EG_{Export,}$ – TE

The transmission loss in export is generally less than 5%. However, in case of Energy Import, the state utility conservatively applies adjustment of 15% to the import values noted at 33 kV metering point

Transmission Loss in Import (TI) = 15% * Energy Import at 33kV metering point ($EG_{Import, KN}$)

Empirical Formula for Energy Import after adjustment of transmission loss (Equation 2)

Net Energy Import after adjustment of transmission loss = EG_{Import}+15%*EG_{Import}

= 115%* EG_{import}

Therefore, Energy Supplied to Grid after adjustment of transmission loss is difference of equation 1 and 2 as given in the Form B signed jointly by representatives of PP and the state utility.

$EG_{BL,KN,y}$ = EG– 115%*EG– Transmission Loss ($T_{E,KN}$)

The Joint meter reading noted at 33 KV metering location contains the following data:-

1. Electricity Export ($EG_{Export,KN}$)
2. Electricity Import ($EG_{Import,KN}$)
3. Transmission Loss ($T_{E,KN}$) between 33 kV metering point and 220 Kv metering point
4. Net Electricity supplied to the Grid [$EG_{BL,KN,y}$= $EG_{Export,KN}$-115%* $EG_{Import,KN}$–$TE_{,KN}$]

Form B is signed by the representatives of PP and the state utility. The net electricity supplied to the grid can be cross checked from the invoices raised on the state utility for supply of net electricity supplied to the grid.

Calibration of meters at Savalsang Project site (Karnataka) /24/:

Calibration details for Karnataka site WTGs 95.2 MW (112*0.85 MW WTGs) 33 KV Substation

Location	Meter Type	Meter Serial Number	Make	Substation	Accuracy Class	Calibration Date	Due date of Calibration
Feeder 1	Main Meter	13191120	L & T	33kV	0.2s	23-09-2020	22-09-2025
	Check Meter	13191121	L & T	33kV	0.2s	23-09-2020	22-09-2025
Feeder 2	Main Meter	13191094	L & T	33kV	0.2s	23-09-2020	22-09-2025
	Check Meter	13191095	L & T	33kV	0.2s	23-09-2020	22-09-2025
Feeder 3	Main Meter	13191100	L & T	33kV	0.2s	23-09-2020	22-09-2025
	Check Meter	13191104	L & T	33kV	0.2s	23-09-2020	22-09-2025
Feeder 4	Main Meter	13191096	L & T	33kV	0.2s	23-09-2020	22-09-2025

	Check meter	13191097	L & T	33kV	0.2s	23-09-2020	22-09-2025
Feeder 5	Main Meter	13191114	L & T	33kV	0.2s	23-09-2020	22-09-2025
	Check Meter	13191122	L & T	33kV	0.2s	23-09-2020	22-09-2025
Feeder 6	Main Meter	13191159	L & T	33kV	0.2s	23-09-2020	22-09-2025
	Check Meter	13191380	L & T	33kV	0.2s	23-09-2020	22-09-2025

During the verification assessment of the project activity, accuracy of all the metering have been checked and found appropriate by assessment team during remote site visit/38/. The installation and working conditions of the meters were checked during the site inspection/37/ and were found to be satisfactory as compared to the provision of calibration/testing frequency, prescribed under the VCS PD/3/, the meters are supposed to undergo testing/calibration once in five years. The meter calibration is not under the purview of PP.

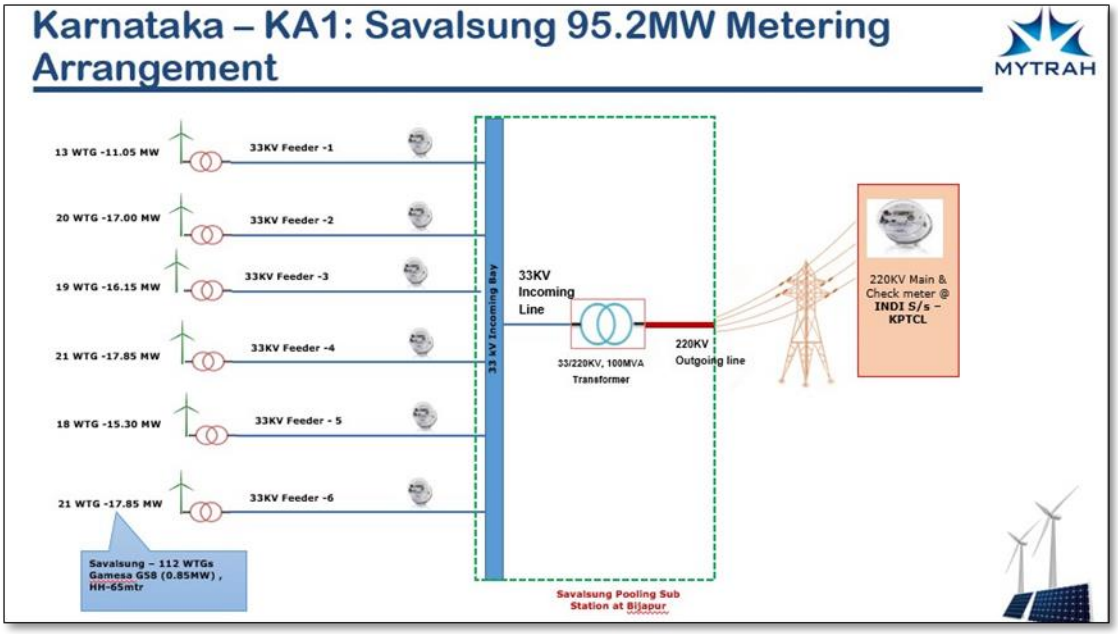


Figure No 02: Single Line Diagram for Savalsang project site of Andhra Pradesh -95.2 MW

Monitoring Plan for Vagrai Project site (Tamil Nadu).

The voltage is generated at 690V and stepped up to 33 KV and further connected.The voltage is stepped up to 220 KV by transformer of 33KV/220KV 200 MVA transformer and supplied to grid. Reading of net electricity imports & export is taken at the metering point of TNEB, located at yard approximately 5 to 7 meters from the WTG. Each WTG has its individual EB

meter, installed by the SEB. The AMR is used to record the readings and same is issued on TNEB Portal every month. The power generated at WTG is sent to TNEB through substation and TNEB sells the power generated to Captive users

The import & export figure at WTG controller is recorded in the excel logbook of Investors representative on a daily basis. This data is preserved both in paper & electronic form. The summary of the generation is submitted by the O&M contractor/Investors representative to the investor on the monthly basis.

The TNEB meter is the main source for monitoring net export to the grid. On mutually decided/SEB official availability date of each month, the reading from the TNEB meter is recorded by the engineers of the SEB in presence of the O & M contractor/Investors representative. Subsequently the Tamil Nadu Electricity Board statements is prepared.

A monthly statement is issued by the State Utility every month to the Project investor against sale of power. Based on the monthly sale of power, invoice is raised to TNEB.

Calibration of meters at Vagrai Project site /26/:

Vagarai Tamil Nadu state 55.5 MW (37*1.5 MW WTGs)[11] 33 KV Substation

S. No.	HTSC No.	Meter S. No.	Substation	Calibration date	Due date of calibration[12]
1.	DRA 002	4321945	33 Kv	25-05-2017	24-05-2022
2.	DRA 010	4322515	33 Kv	23-05-2017	22-05-2022
3.	DRA 019	4322252	33 Kv	22-05-2017	21-05-2022
4.	DRA 037	4322069	33 Kv	20-05-2017	19-05-2022
5.	DRA 038	4321884	33 Kv	20-05-2017	19-05-2022
6.	DRA 039	4322063	33 Kv	05-05-2017	04-05-2022
7.	DRA 042	4321949	33 Kv	20-05-2017	19-05-2022
8.	DRA 050	4322064	33 Kv	20-05-2017	19-05-2022
9.	DRA 052	4321888	33 Kv	20-05-2017	19-05-2022
10.	DRA 055	4322067	33 Kv	22-05-2017	21-05-2022
11.	DRA 011	4322519	33 Kv	23-05-2017	22-05-2022
12.	DRA 014	4322517	33 Kv	23-05-2017	22-05-2022

[11] PP is claiming VCS benefits for only 37 WTGs out of 67 WTGs. Rest 30 WTGs are availing Renewable Energy Certificate (REC) benefits. Meter calibration of the 37 WTGs claiming VCS benefits was done at the date of commissioning. Later on these meters were changed in the year 2017 (respective dates are mentioned in the table above). The calibration records of newly installed meters have been submitted to the DOE and the due date of calibration for the respective meters are mentioned in the above table

[12] As ,meters were not calibrated during current monitoring period, hence error factor is applied in month of may and June due to delay in calibration,

13.	DRA 016	4322521	33 Kv	23-05-2017	22-05-2022
14.	DRA 020	4322433	33 Kv	23-05-2017	22-05-2022
15.	DRA 028	4322566	33 Kv	22-05-2017	21-05-2022
16.	DRA 029	4322574	33 Kv	22-05-2017	21-05-2022
17.	DRA 030	4322374	33 Kv	22-05-2017	21-05-2022
18.	DRA 034	4321977	33 Kv	23-05-2017	22-05-2022
19.	DRA 035	4322581	33 Kv	22-05-2017	21-05-2022
20.	DRA 036	4322582	33 Kv	22-05-2017	21-05-2022
21.	DRA 040	4322160	33 Kv	25-05-2017	24-05-2022
22.	DRA 041	4321952	33 Kv	25-05-2017	24-05-2022
23.	DRA 045	4321943	33 Kv	20-05-2017	19-05-2022
24.	DRA 051	4322065	33 Kv	20-05-2017	19-05-2022
25.	DRA 053	4321944	33 Kv	20-05-2017	19-05-2022
26.	DRA 065	4322579	33 Kv	22-05-2017	21-05-2022
27.	DRA 061	4322154	33 Kv	20-05-2017	19-05-2022
28.	DRA 056	4321973	33 Kv	25-05-2017	24-05-2022
29.	DRA 060	4321948	33 Kv	20-05-2017	19-05-2022
30.	DRA 058	4322514	33 Kv	23-05-2017	22-05-2022
31.	DRA 057	4322513	33 Kv	23-05-2017	22-05-2022
32.	DRA 059	4322068	33 Kv	20-05-2017	19-05-2022
33.	DRA 064	4322066	33 Kv	20-05-2017	19-05-2022
34.	DRA 067	4322573	33 Kv	22-05-2017	21-05-2022
35.	DRA 062	4321892	33 Kv	25-05-2017	24-05-2022
36.	DRA 063	4322158	33 Kv	20-05-2017	19-05-2022
37	DRA 066	4321947	33 Kv	20-05-2017	19-05-2022

During the verification assessment of the project activity, accuracy of all the metering have been checked and found appropriate by assessment team during remote site visit/36/. The installation and working conditions of the meters were checked during the site inspection/36/ and were found to be satisfactory. But as compared to the provision of calibration/testing frequency prescribed under the VCS PD i.e., once in five year all the meters of vagrai project site were calibrated in month of May-2017 (at the time of installation) and which are valid till April-2022.

In current monitoring period (i.e., from 01-April-2022 to 30-June-2023) the calibration of meters is valid till April-2022. For the remaining period (14 Months i.e., from May-2022 to June-2023)

of current monitoring period PP has applied the correction factor[13] of +0.5% on the Import value and -0.5% on the Export Values which is align with section 4.3 of registered VCS PD Version 2 dated 10-February-2016 and section 3.4.2 of VCS VV Manual Version 3.2/11/ the meters are supposed to undergo testing/calibration once in five years. The meter calibration is not under the purview of PP.

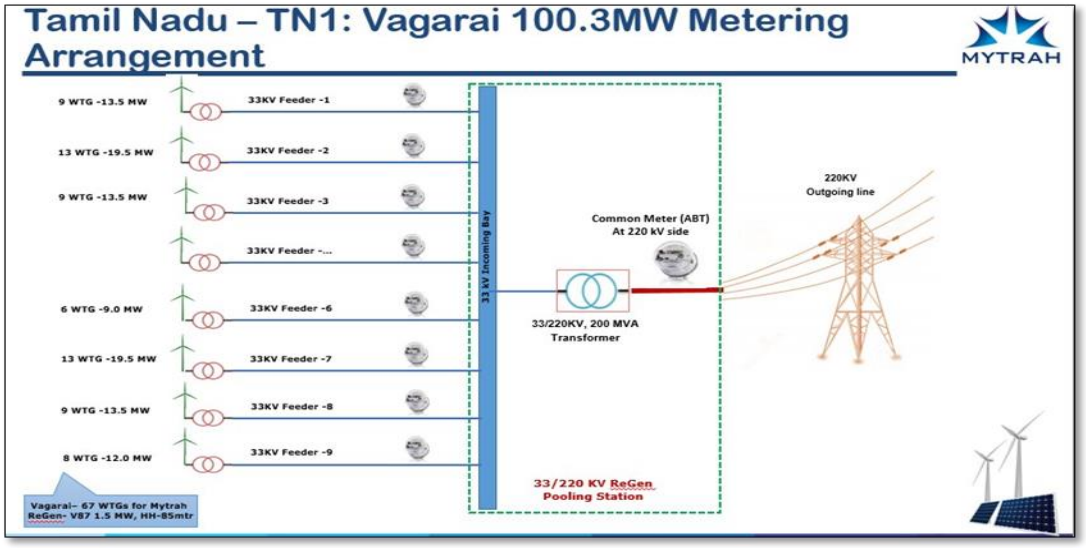


Figure No 03: Project Single Line Diagram for Vagarai site of Tamil Nadu

Monitoring Plan for Burgula Project site.

The voltage is generated at 690V and stepped up to 33 KV and further connected to feeder. The voltage is stepped up to 132 KV by transformer of 33KV/132KV 25 MVA transformers and supplied to grid.

- A Joint Meter Reading combined for 39.7 MW is taken at GSS by the representatives of PP and APTRANSCO at the high voltage side of the step-up transformer installed at the substation at a particular date.
- In case the main metering system is not in service, then the check metering system is be used until the main system is back to service.
- Meter reading is jointly signed by both the representatives.

[13] As per CDM Validation and verification standard for project activities Version 07.0 section 9.4.4.2 paragraph 283 and 284, the delay in calibration is accepted applying the maximum permissible error of the instrument to the measured values taken during the periods between the scheduled date and actual date of calibration. So, In a conservative manner, such that the adjusted measured values of the delayed calibration results in fewer claimed emissions reductions.

- The main and the check metering systems are sealed in presence of representatives of Power producers, and APTRANSCO.
- When any of these metering systems is found to be outside acceptable limits of accuracy or otherwise not functioning properly, it is repaired, recalibrated or replaced.
- PP raises a monthly energy bill/statement based on the JMR at the end of each calendar month and the payment by State Electricity Board is done on this basis. The billing and payment records are maintained by the PP.
- Calibration and Testing of Meters are done once in 5 years.

Calculation of data:

Net exports for Andhra Pradesh $EG_{BL, AP,y}$= EG_{Export} – EG_{Import} *(37.4/39.7)

In the event when the individual verification period dates and billing cycle dates of the various WTGs in the project activity do not coincide, then the apportioning procedure is followed as mentioned below. The deviation was approved in monitoring period.

Apportioning procedure

In the event when the individual verification period dates and billing cycle dates of the various WTGs in the project activity do not coincide, then the monitoring procedure is-

X	:	Sum of generation during partial days of the month recorded at controller meter (kwh) source – Electronic / Manual Log Book
Y	:	Total generation during the month recorded at controller meter (kwh/month)
Z = X/ Y	:	Ratio
B	:	Net Energy export by the WTG as per Monthly Report on Generation and Consumption
Z*B	:	Generation of partial days for calculating emission reduction (kwh)

Calibration of meters at Burgula Project site /26/:

Calibration details for Andhra Pradesh site WTGs 37.4 MW (44*0.85 MW WTGs) 33K Kv wind metering

Meter Type	Meter meter Serial	Calibration Date	Substation	Due Date	New calibration	Due date
Main Meter	APX01701	28-07-2017	33 Kv	27-07-2022	14-02-2022	13-02-2027
Check Meter	APX01702	28-07-2017	33 Kv	27-07-2022	14-02-2022	13-02-2027

Standby Meter	APX01703	28-07-2017	33 Kv	27-07-2022	14-02-2022	13-02-2027

During the verification assessment of the project activity, accuracy of all the metering have been checked and found appropriate by assessment team during remote site visit/38/. The installation and working conditions of the meters were checked during the site inspection/37/ and were found to be satisfactory as compared to the provision of calibration/testing frequency, prescribed under the VCS PD/3/, the meters are supposed to undergo testing/calibration once in a year. The meter calibration is not under the purview of PP

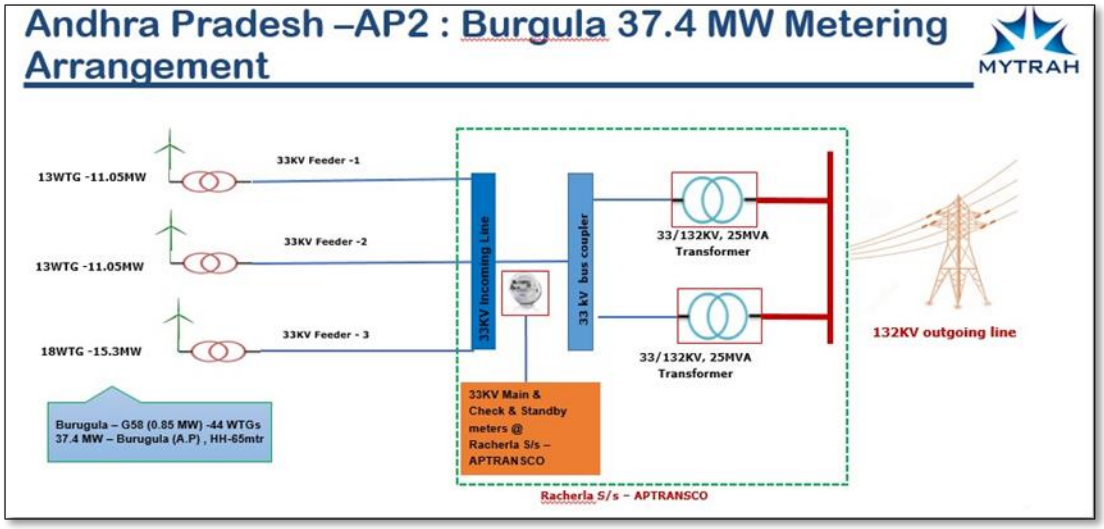


Figure No 04: Project Single Line Diagram for Burgula project site of Tamil Nadu

There are 223 WTGs involved for the electricity import and export. The provision of calibration/testing frequency, prescribed under the VCS PD/3/. The meter accuracy class and calibration interval is under purview of respective state electricity board and PP does not have any control on it. The respective State Electricity Boards are the responsible authorities to conduct the meter calibration. As per registered VCS PD calibration frequency for all the meters installed at site is once in five years. This is verified by assessment team from the calibration certificates/24/ submitted by the PP and Personnel Interviews and Focussed Group Discussions during remote visit detailed in section 2.3 of this report. As per VCS PD "The project adheres to all the mandatory regulatory and statutory requirements at the state as well as national level & hence acceptable to VKU assessment team.

The energy meter calibration certificates/24/ are checked and found that the calibration details provided in the MR /1/ 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, including both the start and end dates.

Emergency Preparedness:

The project activity poses no risk of unidentified activities resulting in substantial emissions. Hence, no emergency preparedness related to data monitoring is deemed necessary for the current monitoring period. In case of any issues with the Main meter or Check meter, they are promptly repaired, recalibrated or replaced. If the Main meter is out of service due to maintenance, repairs or testing, the Check meter is used for readings. During the monitoring period, both the Main and Check meters operated within acceptable accuracy limits.

Personnel Training:

To ensure the proper functioning of the project and accurate emission reduction monitoring, staff receive comprehensive training. This includes equipment operation, data recording, report writing, and adherence to operational and emergency procedures. Training sessions conducted during the current monitoring period covered equipment operation, data recording, reports writing, operation and maintenance.

QA/QC Procedures:

Meters are approved, tested, and sealed by the State Utility, with calibration carried out at specified intervals. Faulty meters are promptly replaced in accordance with guidelines set by the Central Electricity Authority (CEA), which mandates calibration every 5 years. The monthly electricity supplied/exported is cross-checked with sales invoices in the Joint Meter Reading (JMR) report. In case of meter calibration delays, appropriate guidelines are applied to ensure metering accuracy.

The accuracy class of meters and calibration frequency are under the control of the state electricity board, and the Project Proponent (PP) does not influence these aspects. The PP receives net electricity supply values for monitoring purposes, and billing is based on substation meters. All monitored data is archived for 2 years after the crediting period or until the last issuance of VCUs, stored electronically and manually in secure storage by the PP

The meters in use are two-way devices (Electronic Bi-Directional Tri-Vector Energy Meters) that measure both electricity import and export, providing the net electricity consumption data.

If the meters operate outside allowable limits, they will either be replaced or calibrated. When the main meter malfunctions, the consumption recorded by the backup meter is used. If both metering systems fail, malfunction details, timestamps, parameters, and load survey data will be retrieved from the main meter. The nature of the malfunction is then determined, and the recorded consumption in the main meter is adjusted accordingly.

During remote site visit assessment /38/ the assessment team checked all the meters and confirmed that the meters were working satisfactorily. Also, the calibration of meters is completely under purview of respective state utilities / DISCOMs and PP has no control over the same as confirmed through interviews of site personnel /39/ and PPA /25/.

The assessment team has verified the JMRs/Credit Notes/Form B /26/ issued by DISCOM to PP, share certificates by O&M Contractor to PP & Invoices/28/issued to DISCOM identified in the

PPA /25/ by PP confirmed that only the data recorded through main meters is used to calculate net electricity supplied to the grid consequently for ER calculations recorded in ER sheet /2/.

In view of the above discussion the VKU 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 calculation of emission reduction has been done in accordance with the applied methodology used i.e., ACM0002; Version 16/13/. As per the applied methodology, the values of project emission and leakages are considered as zero for the project activity. The emission reduction 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 baseline emissions 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 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 to calculate the emission factor for an electricity system" (tCO_2/MWh)

$EF_{grid,CM,y} = 0.9817$

$EG_{PJ,y}$ = 250,499.68 MWh (from 01-April-2022 till 31-December-2022)

= 125,417.46 MWh (from 01-January-2022 till 30-June-2022)

(Please refer calculations in ER sheet for descriptive calculations for vintage wise round down values and also provided below)

$EF_{Co2} = EF_{Grid,CM,y}$

EF_{Co2}	=	CO_2 Emission Factor in year y (tCO_2e/MWh)
$EF_{Grid,CM,y}$	=	Combined margin CO_2 Emission Factor in year y

Where,

Calculations:

Baseline emissions for Year 2022 (from 01-April-2022 till 31-December-2022)
= 250,499.68 MWh * 0.9817 tCO2e tCO_2/MWh
= 245,914 tCO_2e (Round down Value)
Baseline emissions for Year 2023 (from 01-January-2023 till 30-June-2023)
= 125,417.46 MWh * 0.9817 tCO2e tCO_2/MWh
= 123,120 tCO_2e (Round down Value)
Total baseline Emissions = 245,914 + 123,120 = 369,034 tCO_2e
Net Electricity Generation = 250,499.68 + 125,417 = 375,917.13 MWh

Emission Reduction Achievement:

Year	Baseline emissions or removals (tCO_2e)	Project emissions or removals (tCO_2e)	Leakage emissions (tCO_2e)	Net GHG emission reductions or removals (tCO_2e)
Year-2022 01-April-2022 to 31-December-2022	245,914	0	0	245,914
Year-2023 01-January-2023 to 30-June-2023	123,120	0	0	123,120
Total	369,034	0	0	369,034

It's important to highlight that the estimated emission reduction expected from the project activity during the current monitoring period was projected to be 598,982 metric tons of carbon dioxide equivalent (tCO_2e). However, the actual emission reductions are 369,034 tCO_2e. This represents a decrease of -38.39% over the anticipated value. This difference is majorly due to the exclusion of 45 MW REC Component not considered for emission reduction calculation to avoid double counting. Also, during current monitoring period, the plant underwent breakdowns which is 3.64% of operating hours of 193 (operational during current monitoring period) 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 38.39% lower as compared to the estimated emission reductions. The PLF achieved during current monitoring period is 17.93% whereas registered PLF is 19.90% which is is within sensitivity range of 10%.

The -38.39% actual lower emission reduction achieved during the current monitoring period neither affects additionality nor there is any deviation from the registered monitoring plan, which

was verified during remote assessment & verified and traced through evidences and calculative computation during desk review & hence acceptable to VKU.

All the data have been made available to the assessment team by PP during remote site visit/38/ and as supporting evidences which 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.

The assessment team has checked and confirmed the emission reduction calculations in the spreadsheet and found to be accurate. The monitoring report/1/ is supported by emission reduction spreadsheet/2/. The consistency and formula were verified and found to be accurate.

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 and that the verification of the GHG statement was conducted in in accordance with ISO 14064-3; 2019. /45/

4.6 Non-Permanence Risk Analysis

This is not an AFOLU project hence this section is not applicable.

5 VERIFICATION OPINION

VKU Certification Pvt. Ltd. has performed the eighth verification of the project activity "Wind Based Power Generation by Mytrah Energy (India) Limited (EKIESL-VCS-January-16-01)." in India, VCS Registry Project ID 1521 for the monitoring period 01-April-2022 to 30-June -2023 (Inclusive of both start and end dates) of the first crediting period (21-February -2014 to 20-February -2024; which is inclusive of both dates), with regard to the relevant requirements for VCS activities. The project proponents (JSW Neo Energy Limited) of the "Wind Based Power Generation by Mytrah Energy (India) Limited (EKIESL-VCS-January-16-01)." amounts to **369,034 tCO2e** of carbon dioxide equivalent (tCO2e). These reported reductions have been assessed in accordance with the relevant requirements outlined in the VCS Standard, version 4.5/10/.

The project proponents (JSW Neo Energy Limited) of the "Wind Based Power Generation by Mytrah Energy (India) Limited (EKIESL-VCS-January-16-01)." project 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 PD version 2.0 of dated 10-February-2016 /3/
- 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 4.5/10/ and GHG program applied, on the reported greenhouse gas emission reductions from the project.

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

- The project has been implemented and operated as per the registered VCS PD version 2.0 of 10-February-2016 /3/
- The monitoring report and other supporting documents provided are complete and verifiable and in accordance with the applicable VCS Standard version 4.5/10/ requirements;
- The monitoring is in place as per the applied baseline and monitoring methodology;
- The monitoring plan in the registered VCS PD version 2.0 of 10-February-2016 /3/ is as per the applied baseline and monitoring methodology.

VKU Certification verification approach is based on the understanding of the risks associated with reporting of GHG emission data and the controls in place to mitigate these. VKU Certification planned and performed the verification by obtaining evidence and other information and

explanations that VKU Certification considered necessary to give ***reasonable assurance*** that reported GHG emission reductions are fairly stated.

As per VCS Standard Version 4.5, clause 4.1.23, 4.1.24 and 4.1.25, VKU is of opinion that GHG emission reduction stated in the monitoring report version 03 of 15-December-2023 for the "Wind Based Power Generation by Mytrah Energy (India) Limited (EKIESL-VCS-January-16-01)" in India for the period 01-April-2022 to 30-June-2023 (Inclusive of both start and end dates) ***are fairly and correctly stated.***

Table No 17: Opinion/Conclusion by Validation-Verification Body

<table>
<tr><th>Opinion</th><th>Final Documents</th><th>Monitoring Period</th><th>Emission Reductions achieved</th><th>Remarks</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Positive opinion ☒
Negative Opinion ☐</td><td rowspan="2">Monitoring Report Version 03 of 15-December-2023
Emission Reduction Sheet Version 02 of 28-November-2023</td><td rowspan="2">01-April-2022 to 30-June-2023 (Inclusive of both the days)</td><td rowspan="2">369,034
tCO_2e</td><td rowspan="2">The GHG emission reductions are calculated on the basis of approved methodology ACM0002: Grid-connected electricity generation from renewable sources --- Version 16/13/ and the monitoring plan included in the registered VCS PD /3/</td></tr>
<tr><td>Adverse Opinion ☐
Unmodified Opinion ☒
Modified Opinion ☐</td></tr>
<tr><td colspan="5">Hence VKU is able to certify that the emission reduction from the project during the current monitoring period 01-April-2022 to 30-June-2023 (Inclusive of both start and end dates) amounts to 369,034 tCO_2e assessed in line with the applicable VCS requirements set out in section 3.15 of VCS Standard version 4.5/10/

The VVB hereby issues a resolutely ***positive and unmodified opinion*** meticulously drafted in strict accordance with ISO 14064-3:2019, /42/ Section 09, and the precise provisions of Clause 9.7.1.6 & 9.7.2 of ISO 14065:2020. /43/ This opinion stands in full alignment with the exacting requirements delineated in ISO/IEC 17029:2019, Section 9.7./44/</td></tr>
</table>

Our verification process provides a robust and ***reasonable level of assurance*** regarding the veracity of the reported GHG emission reduction data. This data is devoid of any material misstatements and is steadfastly supported by the evidence furnished by the Project Proponent (PP), comprehensively presented in Table 04 of this report.

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

Year	Baseline emissions or removals (tCO_2e)	Project emissions or removals (tCO_2e)	Leakage emissions (tCO_2e)	Net GHG emission reductions or removals (tCO_2e)
Year-2022 01-April-2022 to 31-December-2022	245,914	0	0	245,914
Year-2023 01-January-2023 to 30-June-2023	123,120	0	0	123,120
Total	369,034	0	0	369,034

Verified GHG emission reductions and removals in the above verification period:

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 start and end dates)	361,228	245,914	-31.92%	This difference is majorily due to the exclusion of 45 MW REC Component not considered for emission reduction calculation to avoid double counting. Also, during current monitoring period, the plant underwent breakdowns which is
01-January-2023 to 30-June-2023 (Inclusive of both start and end dates)	237,754	123,120	-48.22%	2.30% of operating hours of 193 (operational during current monitoring period) 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

01-April-2022 to 30-June-2023 (Inclusive of both start and end dates)	598,982	369,034	-38.39%	Proponent. Hence the actual emission reductions are 38.39% lower as compared to the estimated emission reductions. The PLF achieved during current monitoring period is 17.93% whereas registered PLF is 19.90% which is is within sensitivity range of 10%.

APPENDIX A: ABBREVIATIONS

Abbreviations	Full texts
AT	Assessment Team
BE	Baseline Emissions
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM M&P	Modalities and Procedures CDM
CEA	Central Electricity Authority
CER(s)	Certified Emission Reduction(s)
CH_4	Methane
CL	Clarification Request
CM	Combined Margin
CO2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
DISCOM	Distribution Company
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	Executive Board
EF	Emission Factor
ER	Emission Reductions
PPA	Power Purchase Agreement
FAR	Forward Action Request
GHG(s)	Greenhouse gas(es)
GSS	Grid Sub Station
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
LE	Leakage Emissions
MoV	Means of Verification
MR	Monitoring Report

WTG	Wind Turbine Generators
NGO	Non-governmental Organization
ODA	Official Development Assistance
OM	Operating Margin
(O&M)	Operation and Maintenance
PD	Project Description
PE	Project Emission
PP(s)	Project Proponent(s)
PPA	Power Purchasing Agreement
PSA	Power Sale Agreement
Ref.	Document Reference
SCADA	Supervisory Control and Data Acquisition
SS(s)	Sectoral Scope(s)
TA(s)	Technical Area(s)
TR	Technical Reviewer
UNFCCC	United Nations Framework Convention on Climate Change
VCU	Verified Carbon Unit
VKU	VKU Certification Ltd.
VT	Verification Team
VVS	Validation and Verification Standard

APPENDIX B: AUDIT FINDINGS

CAR: Corrective Action Request_03

CL: Clarification Request_02

FAR: Forward Action Request_00

Type	**Date**	09-October-2023
CL#01	**Reference**	Section 01 of Verification Protocol /DR/OSV/AT Section 02 of Verification Protocol /DR/OSV/AT
Description of the Non-Conformance		
1) **In Section 1.1 of MR:** Assessment team has found that PP has submitted the commissioning certificates for some of the WTGs but not for all the WTGs of the project so PP to provide commissioning certificate of all the WTGs of the project to the assessment team for verification of commissioning date. 2) **In Section 1.1 of MR:** Under audit history table the duration is not consistently mentioned in the format YYMMDD. 3) **In Section 1.7 of MR:** During desk review assessment team was not able to trace the WTG by using the Geo-Coordinates mention in MR. Kindly clarify and also elaborate the project location. The details are provided in the commented MR. 4) **In Section 1.7 of MR:** Please express the latitude and longitude either in decimal degrees format or DMS format in order to maintain consistency. OPEN 5) **In Section 1.9 of MR:** PP to provide the evidence for not participating under any other GHG program. 6) **In Section 1.10 of MR:** PP to provide the evidence for that the PP has not applied this project in any Emission Trading Programs and other Binding Limits. 7) **In Section 1.11 of MR:** a) PP need to clarify is the total project activity is installed in Tamil Nadu only? b) PP to elaborate on the training provided to employees. 8) **In Section 2.2 of MR:** Is the grievance register available separately on individual three sites of the project activity. Kindly Clarify and also submit the copy of the grievance.		
1st Response from PP	**Date**	07-November-2023
1) Commissiong certificate for all WTGs are submitted herewith 2) In Section 1.1 of revised MR version 2.0 Under audit history table the duration is mentioned consistently in the format YYMMDD. 3) In revised MR version 2.0, geo-coordinates are corrected.		

4) In revised MR version 2.0 the latitude and longitude is expressed in decimal degrees in order to maintain consistency

5) No double counting declaration by PP for not participating under any other GHG program is submitted herewith.

6) No double counting declaration by PP for not applying this project in any Emission Trading Programs and other Binding Limits is submitted herewith.

7) In Section 1.11 of MR:

a) This section is corrected in revised MR Version 2.0

b) The details for training provided in MR Version 2.0

8) The grievance register is maintained on all three sites registered under project activity and same is submitted herewith for assessment.

1st Assessment by Audit Team	Status	Closed	Date	28-November-2023

1) **In Section 1.1 of MR:** PP has submitted the commissioning certificates for all the WTGs of the project. **(Closed)**
2) **In Section 1.1 of MR:** The audit history table is made consistent by the PP and date is also mentioned in the correct format, hence acceptable by the assessment team. **(Closed)**
3) **In Section 1.7 of MR:** The Geo-Coordinates are correctly mentioned in MR. Also, the project location is elaborated by the PP. The details are provided in the updated version of MR. **(Closed)**
4) **In Section 1.7 of MR:** The latitude and longitude are mentioned in decimal degrees format and the consistency is maintained. **(Closed)**
5) **In Section 1.9 of MR:** PP has provided the evidence in the form of undertaking for non-participation under any other GHG program. **(Closed)**
6) **In Section 1.10 of MR:** PP has provided the evidence for non-application of this project in any Emission Trading Programs and other Binding Limits. **(Closed)**
7) **In Section 1.11 of MR:**

a) PP has clarified the total project activity is installed in Tamil Nadu in the updated version of MR. **(Closed)**
b) PP has elaborated and also provided evidence regarding the training provided to employees. **(Closed)**
c) **In Section 2.2 of MR: T**he grievance register is made available separately for all the individual three sites of the project activity. PP has clarified and also submitted a copy of the grievance. **(Closed)**

Hence, CL#01 has been closed.

Type	Date	09-October-2023
CL#02	Reference	Section 03 of Verification Protocol /DR/OSV/AT Section 04 of Verification Protocol /DR/OSV/AT Section 05 of Verification Protocol /DR/OSV/AT

Description of the Non-Conformance

1) **In Section 3.1 of MR:**
   a) PP to provide the breakdown details of the WTGs in the bundle for the monitoring period.
   b) PP to provide the copy of O&M contract.
2) **In Section 3.2.2 of MR:** Is there any deviation viz., methodological or project description deviation requested during current monitoring period?
3) **In Section 3.2.2 of MR:**
   a) PP to clarify whether the deviation 01 is approved. Further PP is requested whether any deviation is requested during current monitoring period?
   b) PP to explain the procedure (or cross reference) involved towards measurement of energy generation as per deviation 02
   c) Please elaborate on the apportioning procedure (or cross reference it) under deviation-03.
4) **In Section 4.1 of MR:** PP to provide the weblink for the CEA emission factor and the tool to calculate emission factor.
5) **In Section 4.2 of MR:** Kindly clarify that the accuracy class (0.2s) is applicable to all meters installed at three different sites of the project activity as assessment team found it inconsistent with the QA/QC procedures mentioned in section 4.3 (monitoring plan for Tamil Nadu) of this report and VCS PD version 02 Dated 10-February-2016
6) **In Section 4.3 of MR:** PP to submit a sample copy of the logbook.
7) **In Section 4.3 of MR:** The assessment team found during the remote audit that AMR's are used to record the readings at Vagarai site. PP to clarify this information.
8) **In Section 4.3 of MR:** During remote site visit of Vagarai site the assessment team found that the calibration was not performed as per the procedures mentioned in MR and also the meters are being replaced when found faulty. Kindly Clarify.
9) **In Section 4.3 of MR:** During remote assessment of burgula site, AT found that the meter readings are only taken at GSS only. Kindly clarify.
10) **In Section 4.3 of MR:** During remote assessment of Burgulla site AT found that the calibration of meters is performed by GSS officials on annually basis. Kindly Clarify.
11) **In Section 4.3 of MR:** PP to provide the basis for applying the correction factor and reference document used under QA/QC procedures. OPEN.
12) **In Section 5.4 of MR:** The substantiation is insufficient. PP needs to clarify how only the exclusion of 19.3% of capacity result in the decrease in ERs by 38.2%

1st Response from PP	Date	07-November-2023
1) In Section 3.1 of MR:		

a) The breakdown details are submitted herewith for assessment

b) O&M contracts are submitted herewith for assessment.

2) No methodology deviation is requested during current monitoring period and same is mentioned in revised MR version 2.0

3) In Section 3.2.2 of MR:

a) The deviation 01 is approved and deviations requested in current monitoring period is mentioned in revised MR Version 2.0

b) The cross reference involved towards measurement of energy generation as per deviation 02 is mentioned in revised MR Version 2.0.

c) The cross reference for apportioning procedure under deviation-03 is mentioned in revised MR Version 2.0.

4) In Section 4.1 of MR the weblink for the CEA emission factor and the tool to calculate emission factor is mentioned in revised MR Version 2.0.

5) In Section 4.2 of revised MR version 2.0 the accuracy class is made consistent with the QA/QC procedures mentioned in section 4.3 (monitoring plan for Tamil Nadu) of this report and VCS PD version 02 Dated 10-February-2016

6) In Section 4.3 of MR, Excel sheet is maintained on site and same is submitted herewith for reference

7) In Section 4.3 of revised MR 2.0, the details for AMR's used to record the readings at Vagarai site are added and same is requested as deviation.

8) In Section 4.3 :As per registered PD, meters are calibrated once in five years but due to delayed calibration in current monitoring period error factor is applied in ER calculation form month of may 2023 and June 2023

9) In Section 4.3 of revised MR version 2.0 the details for the meter readings are only taken at GSS only is revised.

10) As per registered PD the frequency of calibration is 5 years as per CEA guidelines.

11) In Section 4.3 of revised MR version 2.0 The details for correction factor is not required

12) Section 5.4 of MR: The details to substantiate the decrease in ERs by 38.2% us added in revised MR Version 2.0

1st Assessment by Audit Team	**Status**	Closed	**Date**	28-November-2023

1) **For Section 3.1 of MR:**
a) PP has provided the breakdown details of the WTGs in the bundle for the current monitoring period. **(Closed)**
b) PP has provided the copy of O&M contract for all the three sites. **(Closed)**

2) **For Section 3.2.2 of MR:** PP has confirmed that there is no deviation viz., methodological or project description deviation during current monitoring period. **(Closed)**
3) **For Section 3.2.2 of MR:**
   a) PP has clarified that deviation 01 is already approved and corrected. Further, there is deviation requested during the current monitoring period. **(Closed)**
   b) PP has explained the procedure (or cross reference) involved towards measurement of energy generation as per deviation 02 in the updated version of MR. **(Closed)**
   c) PP has elaborated the apportioning procedure (or cross reference) under deviation-03 in the latest version of MR. **(Closed)**
4) **For Section 4.1 of MR:** PP has provided the weblink for the CEA emission factor and the tool to calculate the emission factor in MR version 02. **(Closed)**
5) **For Section 4.2 of MR:** PP has clarified the accuracy class (0.2s for Karnataka and Andhra Pradesh and 0.5s for Tamil Nadu) which is applicable to all meters installed at all three sites of the project activity and it is found consistent with the QA/QC procedures mentioned in the PD. **(Closed)**
6) **For Section 4.3 of MR:** PP has submitted sample copy of the logbook. **(Closed)**
7) **For Section 4.3 of MR:** PP has clarified the details for AMR's used to record the readings at Vagarai site are added in the updated version of MR and same is requested as deviation. **(Closed)**
8) **For Section 4.3 of MR:** PP has clarified meters are calibrated once in five years but due to delayed calibration in current monitoring period error factor is applied in ER calculation form month of May 2023 and June 2023 and the same has been incorporated in the updated MR. **(Closed)**
9) **For Section 4.3 of MR:** PP has clarified that the meter readings are only taken at GSS in Burgula site and the same has been added in the MR. **(Closed)**
10) **For Section 4.3 of MR:** PP has clarified for Burgula site, the calibration of meters is performed by GSS officials AS per CEA guidelines and the same has been corrected in the updated MR. **(Closed)**
11) **For Section 4.3 of MR:** PP has provided in the MR and the basis for applying the correction factor used under QA/QC procedures and the same has been updated in the latest version of MR. **(Closed)**
12) **For Section 5.4 of MR:** The details to substantiate the decrease in ERs by 38.2% is added by the PP in revised MR Version 2.0 **(Closed)**

Hence, CL#02 has been closed.

Type	Date	09-October-2023
CAR#01	Reference	Section 01 of Verification Protocol /DR/OSV/AT

Description of the Non-Conformance

1) **The cover page is revised in MR Version 2.0**.
2) **In Section 1.1 of revised MR version 2.0**
   - **a)** Details for the current monitoring period and the methodology used for the same is mentioned.
   - b) PP to specify the name and location of the state Utilities.
   - c) PP to mention about current monitoring period time frame with amount of net energy exported during current monitoring period.
   - d) PP needs to specify how the electricity generated at site is distributed among the captive users and how it is supplied to unified grid of India
3) **In Section 1.5 of MR:** PP to specify the WTG Machine ID along with name of site and location.
4) **In Section 1.7 of MR:** The highlighted rows in the commented MR are showing coordinates where the machines do not exist. This would result in a pd deviation as the registered PD has the same coordinates. OPEN.
5) **In Section 1.10 of MR:**
   - **a)** PP is requested to update section 1.10 of MR as per requirements and guidelines to fill VCS MR template version 4.2.
   - b) PP has not provided any description about Scope 03 emissions in the section
6) **In Section 1.11 of MR:** PP to recheck the values against the vintages under SDG 7 and 13 given in the table.

1st Response from PP	Date	07-November-2023

1) In Cover page of MR: The template is tampered as the font size color page numbers are not adhered to.

2) In Section 1.1 of MR:

a) Details about the current monitoring period and the methodology used for the same is added.

b) The details are added in revised MR Version 2.0.

c) details for current monitoring period time frame with amount of net energy exported during current monitoring period is added.

d) The details are added

3) The WTG Machine ID along with name of site and location is added.

4) The geo-coordinates are corrected in revised MR Version 2.0

5) In Section 1.10 of revised MR Version 2.0

a) Section 1.10 of MR is revised as per requirements and guidelines to fill VCS MR template version 4.2.

b) the description about Scope 03 emissions is added 6) In Section 1.11 of MR version 2.0 the values against the vintages under SDG 7 and 13 given in the table are corrected.				
1st Assessment by Audit Team	**Status**	Closed	**Date**	28-November-2023
1) The cover page is revised in updated version of MR. **2) For Section 1.1 of MR version:** a) Details for the current monitoring period and the methodology used for the same are mentioned in the updated version of MR. **(Closed)** b) PP has specified the name and location of the state Utilities in MR version 2.0. c) PP has mentioned about current monitoring period time frame with amount of net energy exported during current monitoring period in the updated version of MR. **(Closed)** d) PP has specified the ways by which electricity generated at site is distributed among the captive users and ways through which it is supplied to grid of India in the updated version of MR. **(Closed)** **3) For Section 1.5 of MR:** PP has incorporated the WTG Machine ID along with name of site and location in the MR version 2.0. **(Closed)** **4) For Section 1.7 of MR:** The coordinates are correctly mentioned in the updated version of MR. **(Closed)** **5) For Section 1.10 of MR:** a) PP has updated section 1.10 of MR as per requirements and guidelines as per VCS MR template version 4.2. **(Closed)** b) PP has provided a description of Scope 03 emissions in the updated version of MR. **(Closed)** **6) For Section 1.11 of MR:** PP has updated the values against the vintages under SDG 7 and 1 in MR section 2.0. **(Closed)** **Hence, CAR#01 has been closed.**				

Type	**Date**	09-October-2023
CAR#02	**Reference**	Section 03 of Verification Protocol /DR/OSV/AT Section 04 of Verification Protocol /DR/OSV/AT Section 05 of Verification Protocol /DR/OSV/AT
Description of the Non-Conformance		

1) **In Section 2.1 of MR:** PP to update no net harm section as per the clause 3.18 of VCS Standard version 4.4.
2) **In Section 3.1 of revised MR version 2.0:**
   a) PP has not described the implementation status of the project activity as per the requirements of VCS MR Template version 4.2 and VCS Standard version 4.5, Kindly update.
   b) PP to indicate about the technical specification of the machines (WTGs), transformers, equipment available in pooling substation and other equipment's installed and in operations for this project activity.
   c) total operating hours along with the actual operating hours and breakdown hours is mentioned
   d) Name of O&M entity is mentioned.
3) **In Section 3.2.1 of MR:** PP to also indicate about previous monitoring periods.

4) **In Section 4.2 of MR:**
   a) PP need to mention the location of SEB energy meters installed in all the 3 states.
5) **In Section 4.3 of MR:**
   a) PP need to specify the O&M contractor for all the three project sites.
   b) PP to elaborate the energy generation, conversion and distribution to Grid in the MR.
   c) The assessment team found during the remote audit that AMR's are used to record the readings at Vagarai site instead of JMRs. PP to clarify this information.
6) **In Section 5.1 of MR:** PP to specify the tool and version number.
7) **In Section 5.2 of MR:** PP to specify this section as per Methodology requirements.
8) **In APPENDIX II of MR:**
   a) PP to specify the reason of meter change and also submit the evidence for the same.
   b) Calibration dates found inconsistent with the evidence submitted by the PP

1st Response from PP	**Date**	07-November-2023

1) In Section 2.1 of revised MR version 2.0 is updated

2) In Section 3.1 of MR:

a) the implementation status of the project activity is updated as per the requirements of VCS MR Template version 4.2 and VCS Standard version 4.5.

b) The technical specifications are already mentioned

c) total operating hours along with the actual operating hours and breakdown hours is mentioned.

d) Name of O&M entity is mentioned.

3) In Section 3.2.1 of revised MR version 2.0 no deviation about during previous monitoring periods is mentioned.

4) In Section 4.2 of MR:

a) the location of SEB energy meters installed in all the 3 states is mentioned.

5) In Section 4.3 of MR:

a) the O&M contractor for all the three project sites is mentioned.

b) The details are mentioned in revised MR Version 2.0

c) In Section 4.3 of revised MR 2.0, the details for AMR's used to record the readings at Vagarai site are added and same is requested as deviation.

6) In Section 5.1 of MR: PP to specify the tool and version number.

7) In revised MR Version 2.0 this section is revised as per Methodology requirements.

8) In APPENDIX II of MR:

a) The meters were not changed during current monitoring period hence details and evidence not required.

b) Calibration dates are made consistent with the evidence submitted

1st Assessment by Audit Team	Status	Closed	Date	28-November-2023

1) **For Section 2.1 of MR version 2.0:** PP has updated the no net harm section as per clause 3.18 of VCS Standard version 4.4 in the updated version of MR. **(Closed)**
2) **For Section 3.1 of MR version 2.0:**

   a) PP has described the implementation status of the project activity as per the requirements of VCS MR Template version 4.2 and VCS Standard version 4.5, in the updated version of MR. **(Closed)**

   b) PP has indicated about the technical specification of the machines (WTGs), transformers, equipment available in pooling substation and other equipment's installed and in operations for this project activity in the updated version of MR. **(Closed)**

   c) The total operating hours along with the actual operating hours and breakdown hours is mentioned in the updated version of MR. **(Closed)**
   d) The name of O&M entity is correctly mentioned in the MR version 2.0. **(Closed)**
3) **For Section 3.2.1 of MR:** PP has indicated about previous monitoring periods in the MR version 2.0. **(Closed)**

4) **For Section 4.2 of MR:**

   a) PP has mentioned the location of SEB energy meters installed in all the 3 states in the MR version 2.0. **(Closed)**

5) **For Section 4.3 of MR:**

   a) PP has specified the O&M contractor for all the three project sites in the MR version 2.0. **(Closed)**

   b) PP has elaborated the energy generation, conversion and distribution to Grid in the MR version 2.0. **(Closed)**

   c) PP has clarified about ways in which the readings are recorded at Vagarai site and it is further elaborated in the MR version 2.0. **(Closed)**
6) **For Section 5.1 of MR:** PP has specified the tool and version number in the MR version 2.0. **(Closed)**

7) **For Section 5.2 of MR:** PP has specified this section as per Methodology requirements in the MR version 2.0. **(Closed)**
8) **For APPENDIX II of MR:**
a) PP has specified that there is no need for meter change hence this finding is closed. **(Closed)**
b) Calibration dates found consistent with the evidence submitted by the PP. **(Closed)**

Hence, CAR#02 has been closed.

Type	**Date**	08-December-2023
CAR#03	**Reference**	Section 01 of Verification Protocol /DR/TR Section 03 of Verification Protocol/DR/TR Section 04 of Verification Protocol/DR/TR

Description of the Non-Conformance

1) **In section 1.1 of MR:**
   a) Capacity not consistent as per VCS PD.
   b) PP has not added the sequence of monitoring period.
   c) PP has not followed VCS MR template V 4.2 for guidelines.
2) **In section 1.5 of MR:** Location of first WTG was not consistent with registered VCS PD
3) **In section 3.1 of MR:** The project is registered but the sentence is reflecting that the project is still in implementation phase
4) **In section 3.1 of MR:** PP has not mentioned following details-
   1. Specification of the transformers
   2. Distance (nearest and longest) distance from the WTGs to the sub station connected
   3. The voltage, current that is generated at the rotor that is transformed and connected to PSS.
   4. Is the voltage stepped up further to synchronise with the grid?
5) **In section 3.1 of MR:** PP has not provide breakdown details.
6) **In section 4.3 of MR:** PP has not mentioned what procedure is done in case both the meters fails at the same time?

1st Response from PP	**Date**	11-December-2023

1) **In section 1.1 of MR:**
   a) Capacity is made consistent as per VCS PD.
   b) The sequence of monitoring period is added.
   c) MR is revised as per VCS MR template V 4.2 for guidelines.
2) **In section 1.5 of MR:** Location of first WTG is made consistent with registered VCS PD
3) **In section 3.1 of MR:** The language is corrected as per project operational status
4) **In section 3.1 of MR:** PP has not mentioned following details-
   5. Specification of the transformers is mentioned
   6. Details mentioned in section 4.3
   7. Details mentioned in section 4.3
   8. Details mentioned in section 4.3
5) **In section 3.1 of MR:** Breakdown details afre provided in Annexure 5

6) **In section 4.3 of MR:** The procedure done in case both the meters fails at the same time is mentioned in MR				
1st Assessment by Audit Team	**Status**	Closed	**Date**	23-December-2023

1) **For section 1.1 of MR:**
   a) Capacity is consistent as per VCS PD.
   b) PP has added the sequence of monitoring period i.e., *8th periodic verification of First crediting period.
   c) PP has updated the MR as per the guidelines of VCS MR template V 4.2.
2) **For section 1.5 of MR:** Location of first WTG was updated and now it was consistent with registered VCS PD.
3) **For section 3.1 of MR:** The statement has been updated by the PP.
4) **For section 3.1 of MR:** PP has not mentioned following details-
   1. Specification of the transformers now mentioned in revised MR.
   2. Distance (nearest and longest) distance from the WTGs to the sub-station connected in now mentioned in revised MR.
   3. The voltage, current that is generated at the rotor is 690 Volts that is transformed into 33 kV and connected to PSS.
   4. Yes, the voltage stepped up further Stepup to 33kV/220kV to synchronise with the grid.
5) **For section 3.1 of MR:** PP has provided breakdown details in Annexure 5 of MR.
6) **For section 4.3 of MR:** PP has mentioned the procedure which is followed in case when both the meters fail at the same time.

Hence CAR#03 has been closed by Technical Reviewer.

Description of Forward Action Requests raised by VVB:

~~Type~~			~~Date~~	~~DD Month YYYY~~
~~CAR/CL/FAR~~			~~Reference~~	~~Section of Val/Ver protocol~~
~~Description of the Non-Conformance~~				
~~1st Response from PP~~			~~Date~~	~~DD Month YYYY~~
~~1st Assessment by Audit Team~~	~~Status~~	~~Open/Closed~~	~~Date~~	~~DD Month YYYY~~
~~2nd Response from PP~~			~~Date~~	~~DD Month YYYY~~
~~2nd Assessment by Audit Team~~	~~Status~~	~~Open/Closed~~	~~Date~~	~~DD Month YYYY~~

APPENDIX C: COMPETENCE STATEMENT

Team Leader

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	Anil Dhankar
Nationality	Indian
Countries of Experience	India
Education Qualification	B.Sc. (BCZ) M.Sc. (Environmental Science)
Year of Experience	9 months as Project Trainee in VKU
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	07/07/2023
Approved by	Vivek Kumar Ahirwar (Technical Manager)	Date	07/07/2023

Project Trainee

Certification Pvt. Ltd.
VKU.F50W. Competence Statement

COMPETENCE STATEMENT

Name	Priyanshee Modi
Nationality	Indian
Countries of Experience	India
Education Qualification	M.Sc. (Biotechnology) B.Sc. (Biotechnology)
Year of Experience	Fresher
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	05/06/2023
Approved by	Vivek Kumar Ahirwar (Technical Manager)	Date	05/06/2023

Technical Reviewer

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