VAJRAKARUR WIND POWER PROJECT IN ANDHRA PRADESH

Document Prepared By

LGAI Technological Center S.A. (Applus+ Certification)

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Summary:

Verification purpose: LGAI Technological Center S.A. (Applus+ Certification) (Hereafter referred as Applus+ Certification) has been appointed by "Mytrah Vayu (Pennar) Private Limited (MVPPL)" to perform the 5th periodic verification of the "Vajrakarur wind power project in Andhra Pradesh". The main purpose of this verification activity is to have an independent third party for the assessment of the project design, monitoring report /11/ to ensure a thorough assessment of the proposed project activity against the applicable CDM and VCS requirements.

The project activity involves installations of 30 numbers of wind turbines of Suzlon make S88 model 2.1 MW capacity each (aggregating to 63 MW) in the Vajrakarur village, Anantapur district of Andhra Pradesh state. The electricity generated from the WTGs is sold to state electricity board. The first WTG of project activity was commissioned on 31-March-2012 and last WTG was commissioned on 20-December-2012.

The project is registered with VCS with Project ID 1214[1]. Start date of the project activity is the 31-March-2012. The monitoring period for this VCS verification is chosen from 01-June-2021 to 28-February-2022 (including both days) and the project activity achieved 59,885 tCO_2e emission reductions during this monitoring period.

The scope of the verification is the independent and objective review of the Monitoring report /11/ (MR). The MR is reviewed against the relevant criteria (see above) and decisions by the CDM Executive Board and VCS executive board, including the approved baseline and monitoring methodology. The verification was based on the guidance given in the CDM validation and verification standard for project activities, Version 03.0 /09/, review against registered PD/05/ and Final Validation report /06/ and VCS program guideline version 4.1 /09/ and standard version 4.2 /09/.

A risk-based approach has been followed to perform this verification activity. In the course of verification, 07 Corrective Action request (CAR) and 01 Clarification Requests (CLs) were raised and successfully closed. 00 FAR was raised during this verification. The review of the monitoring report /11/ and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and PP have provided LGAI Technological Center S.A. (Applus+ Certification) with sufficient evidence to verify the fulfilment of the stated criteria of VCS.

[1] https://registry.verra.org/app/projectDetail/VCS/1214

The assessment team has employed a risk-based approach to assess the completeness and accuracy of the claims and conservativeness of the assumptions in the MR. The main focus of the assessment team is to identify the significant risks for the project implementation and the generation of VCUs. The verification is not meant to provide any consulting towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the monitoring report /11/ combined.

The only purpose of the verification is its usage during the issuance process as part of the VCS project cycle. Therefore, LGAI Technological Center S.A. (Applus+ Certification) can't be held liable by any party for decisions made or not made based on the verification opinion, which will go beyond that purpose.

The verification has been planned and organized to achieve a Reasonable Level of assurance as per the requirement of VCS. No sampling procedure applied for document verifications. The entire documents checked/WTGs verification conducted to arrive at positive verification conclusions.

CONTENTS

1 INTRODUCTION

1.1 Objective

LGAI Technological Center S.A. (Applus+ Certification) (Hereafter referred as Applus+ Certification) has been appointed by "Mytrah Vayu (Pennar) Private Limited (MVPPL)" to perform the 5th periodic verification of the "Vajrakarur wind power project in Andhra Pradesh" for the monitoring period 01-June-2021 to 28-February-2022 under VCS standard version 4.2 /09/ and guideline version 4.1 /09/. The objective of this verification activity is to have an independent third party for the assessment of the project design, Monitoring report /11/ and Final Verification report and to ensure a thorough assessment of the proposed project activity against the applicable CDM and VCS requirements. In particular;

- the project's baseline is assessed against "ACM0002 - Version 13.0 /09/
- the project's monitoring plan is assessed against "ACM0002 - Version 13.0 /09/
- the projects compliance with 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 legislation and sustainability criteria along with VCS guideline v4.1 and standard version 4.2 /09/
- CDM validation and verification standard for project activities, Version 03.0 /09/
- VCS standard v4.2 /09/
- VCS program guideline v4.1 /09/

Verification is a requirement for all VCS projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of verified carbon units (VCUs).

1.2 Scope and Criteria

The scope is defined as an independent and objective review of the Monitoring report /11/ (MR) prepared as per the registered PD/05/ and registered approved methodology ACM0002 - Version 13.0 /09/. The MR is reviewed against the criteria stated in Article 12 of the Kyoto Protocol, the CDM modalities and procedures as agreed in the Marrakech Accords and the relevant decisions by the CDM Executive Board and VCS standard version 4.2 /09/ and guideline version 4.1 /09/, including the approved baseline and monitoring methodology ACM0002 - Version 13.0 /09/. The verification was based on the requirements in the CDM validation and verification standard for project activities, Version 03.0 /09/ and VCS program guideline version 4.1 /09/ and standard version 4.2 /09/.

The verification is not meant to provide any consulting towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the Monitoring report /11/. In line with Guidelines for Application of materiality in verifications, the verification team has conducted a complete verification of all the information presented in the monitoring report /11/ and data monitored as presented in the emission reduction calculation spread sheet. It follows the paper trail back to the raw data such as meter reading records and invoice /13/. There are no material errors, overestimation of ER, omission or misstatement. The verification team has reviewed all the documents like Commissioning certificates /01/, Technical specification /03/, O&M practices, JMRs /10/, invoices /13/, training records, grievance registers etc.

1.3 Level of Assurance

Applus+ Certification has planned and performed the verification by obtaining evidence and other information and explanations that assessment team considers necessary to give reasonable assurance that reported estimated GHG emission reductions are fairly stated. No sampling procedure applied for site visit or document verifications. The entire documents checked/Power plant verification conducted to arrive at positive verification conclusions.

In our opinion, the estimated GHG emissions reductions were calculated correctly on the basis of the approved baseline and monitoring methodology "ACM0002 - Version 13.0 /09/ and the VCS standard v04.2 /09/.

1.4 Summary Description of the Project

The main purpose of this project activity is to generate clean form of electricity through renewable energy sources (wind energy). Mytrah Vayu (Pennar) Private Limited (MVPPL) is the promoter and project proponent of the project activity. The project activity involves installations of 30 numbers of wind turbines of 2.1 MW capacity each (aggregating to 63 MW) in the state of Andhra Pradesh. The electricity generated from the WTGs is sold to state electricity board.

The project is registered with VCS with Project ID 1214[2]. Start date of the project activity is the 31-March-2012. The monitoring period of this VCS verification covered from 01-June-2021 to 28-February-2022 (inclusive of both dates) and the project activity is achieved 59,885 tCO_2e emission reductions during this monitoring period.

The timeline for Commission of the project activity is also checked by the assessment team. Assessment team checked the Commissioning the WTGs via the Commissioning certificates /01/ and found correct. The project is implemented as per the description in the registered PD/05/.

[2] https://registry.verra.org/app/projectDetail/VCS/1214

No event observed during the current monitoring period which can alter or deviate from the methodology requirement. The details are as below:

Assessment team checked the Commission of WTG with the commissioning Certificate and found correct. The project is implemented as per the description in the registered VCS PD/05/. No event observed during the current monitoring period which can alter or deviate from the methodology requirement.

2 VERIFICATION PROCESS

2.1 Method and Criteria

Verification Process: The project assessment is based on the "CDM validation and verification standard for project activities, Version 03.0 /09/ and "VCS standard version 4.2 /09/ and program guideline version 4.1 /09/" and is conducted using standard auditing techniques to assess the correctness of the information provided by the project participants. Before the assessment begins, members of the team covering the technical scope(s), sectoral scope(s), and relevant host country experience for evaluating the VCS project activity are appointed.

Once the project is received by the assessment team, the members of the assessment team carried out: -

1. A desk review of the Monitoring report /11/ against the registered PD/05/ and final validation report /06/;
2. Site visit and Follow-up interviews with project participant;
3. The resolution of outstanding issues and the issuance of the final verification report and opinion.

The prepared verification report and other supporting documents then undergo an internal quality control at the HQ (Accredited office) before being submitted to the VCS executive board.

In order to ensure transparency, assumptions must be clear and stated explicitly and background material must also be referenced. Applus+ Certification has developed a specific checklist customized for the project. The checklist demonstrates, in a transparent manner, the project criteria (requirements), discussion on each criterion by the assessment team, and the results from validating the identified criteria.

Appointment of the assessment team

According to the sectoral scope / technical area and experience in the sectoral or national bus iness environment, Applus+Certificationhas composed a project assessment team in accordanc e with the appointment rules in the internal Quality Management System of Applus+Certification .

The composition of audit team shall be approved by the Applus+Certification ensuring that the required skills are covered by the team.

The four qualification levels for team members that are assigned by formal appointment rules are as presented below:

- Lead Auditor (LA).
- Auditor (A) / Auditor in Training (AiT).
- Technical Expert (TE).
- Technical Reviewer (TR).

The sectoral scope / technical area knowledge linked to the applied methodology/ies shall be c overed by the assessment team.

Name	Role	SS Coverage	TA Coverage	Financial aspect	Host country experience
Dr. Atul Takarkhede	LA/TE	YES	YES	NA	YES
Mr. Simon Shen	TR	YES	YES	NA	NA

The detail regarding the assessment team is provided below in this report as Appendix 3

Document review

The Monitoring report /11/ version 01 submitted by the PP was reviewed against the approved methodology, registered PD/05/, final validation report /06/ and other relevant criteria to verify the correctness, credibility, and interpretation of the presented information. Furthermore, a cross-check between information provided and information from other sources has been done. A complete list of all documents and evidence material reviewed is included in this report below in Appendix 1.

Onsite Visit

A Site visit is conducted by Applus+ Certification. Audit team performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. The detail is provided in this report.

Resolution of Clarification and Corrective Action Request

The objective of this phase of the Verification was to resolve the requests for corrective actions and clarification and any other outstanding issues which need to be clarified for Applus+ Certification positive conclusion on the Monitoring report /11/. The Corrective Action Requests and Clarification Requests raised by Applus+ Certification were resolved during communications between the Client and Applus+ Certification to guarantee the transparency of the verification process, the concerns raised and responses given are summarized below in the Appendix 2.

The final MR Version 03 /11/ submitted by PP serves as the basis for the final assessment presented. Additional changes to the project during the verification process are not considered

to be significant with respect to the main CDM/VCS objectives. The two CDM/VCS main objectives are the reduction of anthropogenic GHG emissions and the contribution of sustainable development to the host country.

Internal quality control

As final step of a verification of the final documentation including the verification report and the checklist have to undergo an internal quality control by the technical review committee, i.e., each report has to be finally approved either by the head of the technical review committee or the deputy. In case one of these two persons is part of the assessment team approval can only be given by the other one to avoid any conflict of Interest.

After confirmation of the PP the positive verification opinion and relevant documents are submitted to the VCS board through the VCS web-platform.

2.2 Document Review

The details of the document observed during the verification process are listed below in Appendix 1 of this report

2.3 Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Kailas	Mr. Vikram	PP representative	25-April-2022	Project Implementation, JMR /10/ & invoicing procedure, grievance mechanism Management practices, data storage, QA/QC	Dr. Atul Takarkhede (Team Leader)
2.	Reddy	Mr. Nagarjuna	Site In charge, Suzlon		Project Implementation, JMR /10/ & invoicing procedure, calibration, grievance mechanism Management practices, data storage, QA/QC	
3.	Janardhana Reddy	Mr. Neduruma lli	Local villager		Local stakeholders' consultation, grievances etc.	
4.	Reddy	Mr. Nallari	Local villager		Local stakeholders' consultation, grievances etc.	
5.	Rao	Mr. Kasu	Teacher		Local stakeholders' consultation, grievances etc.	
6.	Sharma	Ms. Nitya	EKI Energy Services Limited		GHG calculations, MR and ER preparation	

As referred above, the objective of the interview was to verify the following issues:

- Confirm the implementation and operation of the project in line with VCS PD/05/: 30 WTGs has been commissioned. Same was confirmed during site visit and from Commissioning certificates /01/, Technical specification /03/ of the WTGs, PPA/04/, interviews with PP/Site in charge and JMR /10/ as well as invoice /13/ raised by PP towards state utility.
- Review the data flow for generating, aggregating and reporting the monitoring parameters: JMR /10/ procedures are followed at the project site in line with the state utility practice and are in line with the registered PD/05/. JMR /10/ procedure is confirmed during the interviews with PP and assessment team also checked entire monthly JMR /10/s issued by the state utility for the project activity with the values provided in the ER sheet /12/ for the calculations of the emission reductions;
- Confirm the correct implementation of procedures for operations and data collection: during interviews with PP, it was confirmed that implementation of procedures for operations and data collection is in line with registered PD/05/. Service provider is responsible for the operations, maintenance as well as maintaining other technical data of the project activity. Performance and operation data of each WTG is controlled and maintained by service provider through the dedicated software and made available to the PP as & when required;
- Check the monitoring equipment against the requirements of the PD/05/ and the approved Methodology, including Calibration, maintenance, etc.: monitoring meters are cross checked with the previous Verification report /06/s, interviews with PP, Calibration is checked with the Calibration certificates issued by State Utility authorized third parties;
- Review the calculations and assumptions used to obtain the GHG data and ER: calculation procedures and monthly generation data is checked with JMR /10/ and crosschecked with invoice /13/;
- Identify if the quality control and quality assurance procedures are in place to prevent or correct errors or omissions in the reported parameters: during interviews with PP, it was confirmed that quality control and quality assurance procedures are in place. Metering arrangements & JMR /10/ procedure is defined and controlled by state utility and PP do not have control on it. Assessment team checked all the monthly JMR /10/ values as well as crosschecked with the invoice /13/ and found that emission reductions are calculated conservatively.

Thus, to verify the implementation of project activity, onsite operation & maintenance, monitoring & management practices; assessment team has conducted site visit with site-in-charge, O&M team and also had a detail discussion with the PP representative and reviewed third party statutory documents i.e. Commissioning certificates /01/, Power Purchase Agreement, Complete set of JMR /10/ covering monitoring period, Invoice (for cross check of Net electricity supplied to the grid as per revised PD/05/), breakdown log, O&M schedule, complaint/feedback register and other relevant records.

After physically interviews with concerned onsite persons, local stakeholders & document reviews submitted by PP; assessment team concluded that the project activity is implemented and operated in-line with the registered PD/05/. There is no change in the project design or operation and monitoring practices at site which can alter the applicability of meth or additionality of the project activity. In addition to the interviews with PP, assessment team have checked the Commissioning certificate, PPA/04/ and JMR /10/s and found that the project activity is implemented as per the PD/05/, and Monitoring report /11/ submitted by the PP for current monitoring period. From review of JMR and invoice /13/ assessment team therefore of the opinion that project is implemented as described in the registered PD/05/ and there is no change in monitoring practices as well as all monitoring parameters as envisaged in the PD/05/. All the monitored values are supported by the evidences i.e., JMR /10/ and found that information provided in the MR is in line with the submitted evidences. Assessment team reviewed all the Calibration certificates and found that monitoring meters are calibrated periodically except delayed period November 2021 to January-2022

2.4 Site Inspections

Duration of Site visit: 25-April-2022				
No.	**Activity performed on-site**	**Site location**	**Date**	**Team member**
1.	The verification team conducted site visit to confirm the information and to resolve issues identified in the document review. This involved: 1) An assessment of the implementation and operation of the CDM project activity as per the registered PD/05/. 2) A review of information flows for generating, aggregating and reporting of the monitoring parameters. 3) interviews with relevant personnel to confirm that the operational and data collection procedures are implemented in accordance with the Monitoring Plan. 4) A cross-check between information provided in the MR and data from other sources. 5) A check of the monitoring equipment including Calibration performance, and observations of monitoring practices against the requirements of the PD/05/ and the applied Methodology. 6) A review of calculations and assumptions made in determining the GHG data and ERs. An identification of QA/QC procedures in place to prevent, or identify and correct, any errors or omissions in the reported monitoring parameters	Anantapur district of Andhra Pradesh state, India	25- April - 2022	Dr. Atul Takarkhede (Team Leader)

2.5 Resolution of Findings

The objective of this phase of the Verification was to resolve the requests for corrective actions and clarification and any other outstanding issues from validation which need to be clarified for Applus+ Certification's positive conclusion on the Monitoring report /11/. The Corrective Action Requests and Clarification Requests raised by Applus+ Certification were resolved during communications between the Client and Applus+ Certification to guarantee the transparency of the verification process, the concerns raised and responses given are summarized below in the appendix 2.

The final MR submitted by PP serves as the basis for the final assessment presented. Additional changes to the project during the verification process are not considered to be significant with respect to the main CDM/VCS objectives. The two CDM/VCS main objectives are the reduction of anthropogenic GHG emissions and the contribution of sustainable development to the host country.

Areas of validation and verification findings	No. of CL	No. of CAR	No. of FAR
Project design document and Monitoring report	00	01	00
Description of project activity	00	01	00
Application of selected baseline and monitoring methodology and selected standardized baseline			
Applicability of methodology and standardized baseline	00	00	00
Deviation from methodology	00	00	00
Clarification on applicability of methodology, tool and/or standardized baseline	00	00	00
Project boundary	00	00	00
Establishment and description of baseline scenario	00	00	00
Demonstration of additionality	00	00	00
Emission reductions	01	01	00
Calibration details	00	01	00
Monitoring plan	00	00	00
No Net harm assessment	00	00	00
Local stakeholder consultation	00	01	00
Others 1. No double counting declaration 2. SDG goals	00	02	00
Total	**07**	**07**	**00**

The list of findings and the resolution is presented in Appendix 2 of this report.

2.5.1 Forward Action Requests

No FAR has been raised during this Verification and previous verification/validation.

2.6 Eligibility for Validation Activities

This section is not applicable for present verification, as Applus+ Certification holds the accreditation for Validation of projects for this Sectoral Scope.

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

The project is registered with CDM with reference number UN9650[3]. The same is confirmed by checking the UNFCCC web site. The project activity is not availing any other form of credits & also REC India benefits and the same can be confirmed from publicly available link of REC generators.

Web-link: https://www.recregistryindia.nic.in/index.php/general/publics/registered_regens

Further, the project proponent has provided undertaking for not availing other forms of environmental credit including REC for the same crediting period under consideration.

3.2 Methodology Deviations

PP has not requested any methodological deviation. Thus, this section is not applicable for present verification.

3.3 Project Description Deviations

Data Adjustment in case of monitoring period different from billing period.

As the billing cycle differs from monitoring period, therefore In case the dates of a particular monitoring period do not match with the dates of the billing period, the net electricity exported to the grid would be calculated as follows:

D = (A/B) *C

Where:

A = Difference of number of days which are not matching of billing period and monitoring period.

B = Number of days of the billing period/ month which was not matched with the monitoring period.

C = Net Electricity supplied to the grid for that given billing period/ month.

Based on the above procedure, PP has calculated electricity generation value for first and last month of monitoring period after apportioning which is used for calculation of emission reductions. This is to be noted that the detail procedure of monitoring is illustrated here for the sake of understanding; for the preparation of monitoring report /11/ during periodic verifications, rather than net generation value for first and last month of MP, values are directly taken JMR

[3] https://cdm.unfccc.int/Projects/DB/SGS-UKL1369989385.4/view

/10/ used for emission reduction calculation. No other parameters as explained above shall be used and presented in the monitoring report /11/.

Above deviation is requested by PP from VVB. During Assessment of the same, VVB team observed requested deviation does not affect the project design and additionality of the project activity. Hence accepted.

3.4 Grouped Project

The project is not a grouped project. Therefore, this section is not applicable.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

The project activity involves an installation of 30 Wind Turbine Generators (WTGs) of total generating capacity of 63 MW (30 x 2.1 MW) of Suzlon make. The WTG units are installed in Anantapur district in the state of Andhra Pradesh and the electricity generated is exported to NEWNE grid of India. Verification team confirmed from the registered PD/05/ and on-site visit that the location of the project activity is in Vajrakarur village of Anantapur district in the state of Andhra Pradesh including the coordinates is same as mentioned in the registered VCS PD/05/ and CDM PDD/05/,

The project activity, "Vajrakarur wind power project in Andhra Pradesh" was registered as a CDM project on 11-June-2013 (UNFCCC Ref No.9650[4]) applying the methodology ACM0002 - Version 13.0 /09/. The WTGs of the project activity are owned by the Project Proponent, i.e., Mytrah Vayu (Pennar) Private Limited (MVPPL), which is verified from commissioning certificate and the PPA/04/ for the project activity.

Project location is confirmed by the assessment team during the site visit. Assessment team also checked with the GPS meter regarding the latitude and longitude of the project site and confirm that the details as mentioned in the registered VCS PD/05/and CDM PD/05/ are correct. The detail is as below:

S. No.	Location	Zone	Latitude (N)	Longitude (E)	Date of Commissioning
1	VAR010	43 P	150 1' 7.68"	770 14' 37.18"	29-October-2012

[4] https://cdm.unfccc.int/Projects/DB/SGS-UKL1369989385.4/view

2	VAR015	43 P	150 0’ 27.99”	770 15’ 14.58”	29-October-2012
3	VAR016	43 P	150 0’ 27.88”	770 16’ 1.56”	29-October-2012
4	VAR018	43 P	150 0’ 4.79”	770 15’ 44.45”	18-June-2012
5	VAR019	43 P	140 59’ 52.17”	770 16’ 1.02”	30-October-2012
6	VAR022	43 P	140 59’ 6.44”	770 15’ 44.64”	30-Octobe-2012
7	VAR023	43 P	140 58’ 56.84”	770 15’ 55.01”	18-June-2012
8	VAR024	43 P	140 59’ 23.72”	770 16’ 35.89”	18-June-2012
9	VAR026	43 P	150 0’ 43.37”	770 16’ 46.07”	30-Octobe-2012
10	VAR027	43 P	150 0’ 16.94”	770 17’ 36.85”	30-October-2012
11	VAR028	43 P	1500’ 4.62”	770 17’ 29.05”	30-October-2012
12	VAR029	43 P	140 59’ 42.71”	770 17’ 18.65”	30-October-2012
13	VAR030	43 P	140 59’ 30.30”	770 17’ 13.80”	30-October-2012
14	VAR037	43 P	140 58’ 42.71”	770 18’ 35.17”	30-October-2012
15	VAR038	43 P	140 58’ 21.07”	770 17’ 57.63”	31-March-2012
16	VAR039	43 P	14°58’ 6.25”	77° 17’ 56.50”	31-March-2012
17	VAR040	43 P	14° 57’ 44.42”	77°18’ 3.20”	31-March-2012
18	VAR050	43 P	14° 59’ 58.87”	77° 19’4.90”	20-December-2012
19	VAR051	43 P	15° 0’ 10.25”	77°18’ 55.68”	20-December-2012
20	VAR203	43 P	15°1’ 6.13”	77° 15’ 21.67”	29-October-2012
21	VAR204	43 P	15° 0’ 48.04”	77° 15’ 22.42”	29-October-2012
22	VAR205	43 P	15°0’ 2.22”	77° 15’ 8.52”	29-October-2012
23	VAR208	43 P	14° 58’ 13.90”	77° 16’ 27.42”	18-June-2012
24	VAR209	43 P	14° 58’ 38.57”	77° 17’34.36”	31-March-2012
25	VAR216	43 P	15°1’ 29.917”	77° 16’ 26.95”	30-October-2012
26	VAR217	43 P	15° 1’ 16.78”	77° 16’ 42.34”	30-October-2012
27	VAR300	43 P	15° 1’ 23.81”	77° 15’ 24.03”	29-October-2012

28	VK 108	43 P	15° 2' 21.62"	77° 16' 27.63"	29-October-2012
29	VK 109	43 P	15° 2' 30.00"	77° 16' 16.30"	29-October-2012
30	VK 110	43 P	15° 2' 38.23"	77°16' 5.95"	29-October-2012

The project boundary includes the electricity generation equipment at the project site, sub-station and the NEWNE grid.

Assessment team also checked the technical details of the WTGs installed onsite. The same is checked during the onsite visit from the number plates, module capacity etc. also cross checked from the technical details from Manufacture.

The project activity involves WTG supplied by Suzlon limited. The WTGs are Suzlon 2.1 MW machines. The WTGs implemented in this project have been supplied by Suzlon limited as complete unit without any technology transfer.

The technical details of the WTG are as follows:

Rotor:	
Diameters	82.5 m
Number of Blades	3
Swept area	5346m^2
Rotor speed range	9-18 rpm
Rotational direction	Clockwise looking downwind
Maximum tip speed	77.2 m/s
Orientation	Upwind
Speed regulation	Pitch control
Aerodynamic brakes	Full feathering
Pitch System:	
Principle	Independent blade pitch control
Actuation	Individual electric drive
Yaw System:	
Yaw rate	0.5 degree/s

Assessment team checked the commissioning certificates /01/ and confirmed that the dates of Commission for the plants are correct.

The assessment team confirmed that there is no proposed or actual change to the project design during this monitoring period except installation of remaining WTGs. The project design as mentioned in the registered PD/05/is implemented and thus the same is acceptable to the assessment team. All required monitoring equipment's and procedures as mentioned in the registered PD/05/ are available and implemented in an appropriate manner.

The organisational role and responsibility as mentioned in the registered PD/05/ is followed onsite. All the monitoring equipment was calibrated once in three year and thus complied with

registered monitoring plan. All the emergency preparedness as mentioned in the registered PD/05/ is followed onsite and no discrepancies were found regarding the same.

The project activity fulfilled the contribution of sustainable development to the host country by implementing environmentally friendly technology and creating employment opportunities to the local community. Same is confirmed during site visit.

The ex-ante fixed grid emission factor of 0.8971 tCO_2/MWh has been used for the baseline emission calculation which is line with the registered CDM PD/05/.

By comparing the actual ER claimed in this monitoring period with the estimate in the registered VCS PD (93,017 tCO_2e, [124,363/365 * 273]), the actual emission reductions (59,885 tCO_2e for the monitoring period considering actual operational days of 243) are lower than by 35.62% what is stated in the registered VCS PD/05/ and CDM PD/05/ which surely will not lead to the overestimation of VCUs.

All required equipment's and procedures are available and implemented in an appropriate manner.

It was observed that the monitoring plan was implemented as per the requirement of the registered PD, FVR and approved methodology ACM0002 - Version 13.0 /09/. The organisational role and responsibility as mentioned in the registered PD/05/ is followed onsite. All the monitoring equipment was calibrated as per the specified interval in the registered PD. All the emergency preparedness as mentioned in the registered PD/05/ is followed onsite and no discrepancies were found regarding the same.

Start date of the project activity is 31-March-2012. The Project has applied for the CDM under the Kyoto protocol and registered with CDM having UNFCCC ref number as UN9650[5]. CERs for the period 11-June-2013 to 10-June-2014 are already issued as per UNFCCC website. The project activity will avail GHG emissions reductions for only one program i.e., VCS[6] and there will not be any double accounting for the same.

It was also observed during the verification process that project is not rejected by any other GHG program around the world. Declarations dated 10-January-2022 in that effect is also provided by PP.

It was also observed during the verification process is that project is not rejected by any other GHG program around the world. The project is registered by VCS board and the registered PD/05/ and registered FVR is used to assess the present periodic verification. The following web sites were checked to confirm the same:

[5] https://cdm.unfccc.int/Projects/DB/SGS-UKL1369989385.4/view

[6] *https://registry.verra.org/app/projectDetail/VCS/1214*

1. www.v-c-s.org

Assessment team hereby also confirms from the declaration made by PP the projects are not registered under the any other scheme except CDM, Other environmental or GHG credits & REC mechanism of India and the same is cross-checked at https://recregistryindia.nic.in. Moreover, as per state tariff policy the project is not eligible to receive REC benefits as it is selling power to State electricity grid.

The assessment team observed that the project is in line with the registered PD, FVR and approved methodology and thus no clarification/deviation is sought except project description deviation for non-implementation of 18 WTGs.

Sustainable development indicators

As a part of regional development efforts associated with the project, PP has supported many education, health & infrastructure related needs for local people. These are funded from the revenue generated from the operation of the project activity. In the absence of project activity, there would be no revenue generated from the project and hence the activity would have not occurred in the absence of the project activity.

Thus, the project activity contributes to the sustainable development of the country.

The project is not involved in any other form of GHG emission program and VCUs generated from this verification will not be used for other trading program to avoid any kind of double counting. The same is confirmed by the PP during the on-site verification audit. Assessment team also conducted independent review regarding the same and found that the statement of the PP is accurate, and project is not involved in any other kind of GHG trading for the present verifications/monitoring period.

The assessment team observed that the project is in line with the registered PD/05/ and applied methodologies except apportioning mechanism requested in deviation above.

Assessment team confirms following during the on-site verification:

1. Start date of the project is 31-March-2012.
2. An undertaking letter has been submitted by PP for no double counting with any other GHG program. PP also has given a written declaration that project will not claim other form of GHG credit for the concerned monitoring period.
3. Assessment team confirms that this is the 5th monitoring under VCS and covers the activity from 01-June-2021 to 28-February-2022 (inclusive of both dates). VCS crediting period is of 10 years with 31-March-2012 as the start date of crediting period and end date as 30-March-2022.
4. Assessment team checked and found that the Project proponent of the project activity is as below for the current monitoring period:

Organization name	*Mytrah Vayu (Pennar) Private Limited (MVPPL)*

Contact person	*Mr. Ramesh Kure*
Title	*Assistant Manager*
Address	*1st Floor, 8001, 8th Floor, Q-City, Nanakramguda, Gachibowli, Hyderabad 500032, Telangana, INDIA*
Telephone	*+91 72888 75975*

CAR 01, CAR 02, CAR 03 & CAR 04 were raised during the verification process and closed successfully. Please refer Appendix 2 of this report for the detail closure of the CAR.

4.2 Safeguards

4.2.1 No Net Harm

No potential environment or socio-economic matter was found during the documents review of VCS PD/05/ and grievance register etc. The project is renewable energy project and thus no negative impact observed due to project activity.

The project activity promotes environmental and socio-economic well-being as it results in zero GHG emissions due to installation and operation of clean, renewable energy technology for electricity generation. The report on "Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects" prepared by MNRE dated September 2013[7]. This report clearly mentioned that solar/Wind power project activity operations do not result in direct air pollution, noise pollution. Moreover, also as per the Central Pollution Control Board of India notification[8] solar/wind project falls under White Category and are practically non-polluting.

4.2.2 Local Stakeholder Consultation

Local stakeholder consultation has been conducted at the time of project registration. For on-going stakeholder's communication, PP have maintained feedback/complaint register at the site office. All the stakeholders are happy with the implementation and operation of the project activity and no negative comments envisaged for the project activity. Complaint/suggestion/feedback register is maintained at site as a part of ongoing communication with stakeholders in line with clause 3.16.17 of VCS Standard, ver. 4.2 /09/ and appropriate actions taken time to time by PP.

Assessment team checked the grievance register provided by PP and found that local stakeholders can anytime lodge their grievances if any in the register over the operational life time of the project. However, during current monitoring period no grievance was received.

CAR 05 was raised during the verification process and closed successfully. Please refer Appendix 2 of this report for the detail closure of the CAR.

[7] https://smartnet.niua.org/sites/default/files/resources/report-on-developmental-impacts-of-RE.pdf

[8] http://envfor.nic.in/sites/default/files/Latest_118_Final_Directions.pdf

4.3 AFOLU-Specific Safeguards

This section is not applicable as this project activity is a non-AFOLU project activity.

4.4 Accuracy of GHG Emission Reduction and Removal Calculations

Means of verification	The verification team assessed whether the data and calculations of GHG emission reductions achieved resulting from the VCS PD. The verification team has checked whether calculations of baseline GHG emissions, project GHG emissions and leakage GHG emissions have been carried out in accordance with the formulae and methods described in the monitoring plan of the VCS PD.
Findings	CAR 06 and CL 01 were raised during the verification process and closed successfully. Please refer Appendix 2 of this report for the detail closure of the CAR.
Conclusion	**Baseline Emissions:** The baseline Emissions for a given year is calculated by multiplying the energy baseline with the grid emission factor. The grid in this case would be the 'Indian Grid' Formula Used: - $BEy = EG_{PJ,y} \times EF_{CO2,grid,y}$ Where, $EG_{BL,y}$ = Net electricity supplied to the NEWNE regional grid $EF_{CO2,grid,y}$ = Emission Factor in year y; t CO_2e/kWh **Ex-ante Parameter:** **$EF_{grid,OMsimple,y}$** = Parameter is fixed ex-ante for the entire crediting period and as per the validated VCS PD/05/ same is fixed 0.9515 tCO_2/MWh. Verification team found same was used in the ER calculations. **$EF_{grid,BM,y}$** = Parameter is fixed ex-ante for the entire crediting period and as per the validated VCS PD/05/ same is fixed 0.7339 tCO_2/MWh. Verification team found same was used in the ER calculations. **$EF_{grid,CM,y}$** = Parameter is fixed ex-ante for the entire crediting period and as per the validated VCS PD/05/ same is fixed 0.8971 tCO_2/MWh. Verification team found same was used in the ER calculations. $EF_{grid,CM,y}$, $EF_{grid,BM,y}$, & $EF_{grid,OMsimple,y}$ were mentioned as ex-ante fixed parameter. Assessment team checked the values, source of data, choice of data, purpose of the data mentioned in the MR from the registered PD/05/ and confirms that the similar approach was considered for the current monitoring period also. **Ex-post parameters:** As per the registered monitoring plan and requirement of the registered methodology following parameters needs to be monitored: **$EG_{PJ,y}$ =** Net Electricity Supplied to the grid by the project activity. This parameter is calculated as net electricity supplied to the grid by the WEGs in a given month from the difference of total energy exported and total energy

	imported. The Export & Import values for the particular month are available from the JMR /10/ issued by the state Utility as per below calculation: Reading at metering point is carried out once in a month in presence of O&M officials and state electricity board personnel. The electricity export and Import from each plant is recorded by set of cluster meters (Main and Check Meter) installed at 33kv Suzlon substation metering point. Electricity exported and Imported by the projects are calculated as the sum of values of electricity exported/imported and forms the part JMR /10/ and Invoice /13/. The primary source of data is monthly JMR /10/ issued by AP TRANCO. Invoice /13/ are used to cross check the net electricity exported to grid. All the energy meters of accuracy class 0.2s are under the purview of the state electricity boards. The details of electricity meters are provided in Appendix 5 of this report The verification team has checked the entire monthly JMR /10/ reports for net electricity generated & supplied to the grid and crosschecked same with the invoice /13/ raised by PP towards State Utilities for the monitoring period. All values are found correct. All the parameters are monitored and recorded as per the monitoring plan in the registered VCS PD. The verification team has crosschecked the revised ER sheet /12/ and monitoring report /11/ data with the JMR /10/ sheet and invoice and found all the values are matching. During the current monitoring period, the project activity supplied 66,754 MWh electricity to the grid. $EG_{export,y}$ = Electricity exported by project activity to grid after apportioning of transmission losses between 33kV metering point (cluster meter) and 220kV metering point (Bulk metering point). This parameter is based on energy exported to the grid calculating after apportioning of transmission losses between 33kV metering point (cluster meter) and 220kV metering point (Bulk metering point). QA/QC procedures during monitoring is as implemented by DISCOM/State utility pursuant to the provisions of the power purchase agreement and PD/05/. During the current monitoring period, the project activity supplied 73,900.76 MWh electricity to the grid. EG_{pe} = Electricity Export recorded at 33 KV (JMR at 33kV metering point) cluster points connecting total 30 machines of the project activity. This parameter is based on the energy exported to the grid recorded at 33 KV (JMR /10/ at 33kV metering point) cluster points connecting total 30 machines of the project activity. The parameter is taken from the monthly Joint metering reports recorded at cluster metering point by representative of state utility and same submitted to assessment team by PP. QA/QC procedures during monitoring is as implemented by DISCOM/State utility pursuant to the provisions of the power purchase agreement and PD/05/. During the current monitoring period, the project activity supplied 75,158.70 MWh electricity to the grid. EG_{imp} = Electricity imported recorded at 33kV (JMR /10/ at 33kV metering point) cluster metering points connecting a total of 30 machines of the project activity This parameter is based on the energy imported from the grid recorded at 33 KV (JMR /10/ at 33kV metering point) cluster points connecting total 30 machines of the project activity. The parameter is taken from the monthly Joint metering reports recorded at cluster metering point by representative of state utility and

same submitted to assessment team by PP. QA/QC procedures during monitoring is as implemented by DISCOM/State utility pursuant to the provisions of the power purchase agreement and PD/05/. During the current monitoring period, the project activity supplied 567 MWh electricity to the grid.

EG_e= Electricity export recorded at 220 kV meters (main and check) at Suzlon pooling station connecting machines of the project activity and the machines commissioned by other project developers.

This parameter is based on the energy exported to grid and recorded at 220 kV meters (main and check) at Suzlon pooling station connecting machines of the project activity and the machines commissioned by other project developers. The parameter is taken from the monthly Joint metering reports recorded at 220kV of Suzlon pooling substation by representative of state utility and same submitted to assessment team by PP. QA/QC procedures during monitoring is as implemented by DISCOM/State utility pursuant to the provisions of the power purchase agreement and PD/05/. During the current monitoring period, the project activity supplied 171,888 MWh electricity to the grid.

L_{ep}= Total percentage of transmission loss for export between the metering point at 33 kV (sum of all the WEGs connected to Bulk metering point including non-project activity as well as project activity WTG's) metering points and the metering point at 220kV at Suzlon pooling substation.

This parameter is percentage of transmission loss for export between the metering point at 33 kV (sum of all the WEGs connected to Bulk metering point including non-project activity as well as project activity WTG's) metering points and the metering point at 220kV at Suzlon pooling substation. The parameter is taken from the monthly generation report for the project activity submitted to assessment team by PP. QA/QC procedures during monitoring is as implemented by DISCOM/State utility pursuant to the provisions of the power purchase agreement and PD/05/. During the current monitoring period, the project activity supplied 1,240 MWh electricity to the grid.

Baseline Emission Calculation (BE_y): -

$BE_y = EG_{PJ,y} * EF_{CO2,grid,y}$

BEy = 66,754 x 0.8971

= 59,885 tCO_2e (round down values)

Project Emission (PE_y) Calculation: -

PE_y = As per ACM0002 - Version 13.0 /09/, all renewable energy power generation project activities, emissions due to the use of fossil fuels for the backup generator can be neglected. As the project activity involved wind project emissions (PE_y) are taken as zero.

leakage Emission (L_y) Calculation: -

Leakage: As per applied methodology ACM0002 - Version 13.0 /09/ and VCS PD/05/ Leakage emissions are not considered for the project activity.

Hence, $ER_y = BE_y - PE_y$

= 59,885 – 0

= 59,885 tCO_2e (Rounddown values)

	Assessment team confirmed that the GHG emission reductions and removals have been quantified correctly in line with the registered VCS PD. Verification team also confirms that the monitoring has been carried out in accordance with the monitoring plan contained in the registered VCS PD.

4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

Means of verification	The verification team checked the Calibration details of the monitoring meters with the calibration certificates.
Findings	CAR 07 was raised during the verification process and closed successfully. Please refer Appendix 2 of this report for the detail closure of the CAR.
Conclusion	The metering arrangement is tri-vector bi-directional energy meters of Elster Make; accuracy class 0.2s (main and check) connected to a set of WTGs of the PP at the project site. The electricity generated is stepped up by 33 kV transmission lines and fed to the metering point which has main meter and check meter. The electricity is fed from this metering point to 33/220 kV pooling sub-station where the bulk meter (main meter and check meter) has been installed and the same has been presented in the diagram below. The bulk meter at the sub-station measures total electricity exported by the different project participants located at the site. These electricity meters are being used by state electricity board for JMR /10/ (Joint Meter Reading) electricity generation statements. The PP has made clusters of WTGs at the project site for the purpose of metering. Each cluster main and the check meter. All the clusters of the project activity are exclusively connected to WTGs of the project activity i.e., there is no WTGs of other project owners that are connected to these clusters. VVB team has verified during site visit that clusters meters (dedicated meters/ individual meters) of project activity and other customers are connected to the Suzlon pooling sub- station at bulk metering point at 220 kV. Since the main and check meters at 220 kV metering point at the Suzlon Pooling station is connected to the machines of the project activity and the machines commissioned by other project developers, therefore in order to determine the net electricity supplied to the grid at 220kV at Suzlon sub-station, the state utility apply the apportioning of transmission loss to the meter reading recorded at 33kV. During commissioning of the WTGs monitoring meters of accuracy class i.e., 0.2s were installed. The meters are monitored continuously & cumulative readings are taken at the end of the month by joint meter reading procedure. These are sealed by State Utilities to avoid malfunctioning with meter readings. Calibration frequency of the monitoring meters is once in a year. However, Meters are usually calibrated yearly by the meter testing division of the state utility in the presence of O&M Contractor / investor's representatives and State Utilities officials to ensure the working of meter within permissible limits, however, calibration frequency and schedule is under the complete discretion of State Utility and PP do not have control on it. The calculation of net electricity supplied to grid is under purview of state electricity board and PP does not have control on it. Calibration details of the monitoring meters checked with calibration certificates submitted by PP and observed delay in the scheduled

	calibration of cluster meters installed at project site. Hence, PP has applied error factor 0.2% in values of $EG_{export, y}$ and EG_{imp} for the complete month of delay period. Assessment team verified latest calibration certificates of cluster meters and found that during delay period meter error are under maximum permissible error thus applied error factor of 0.2% to the delayed period is correct. Please refer Appendix 5 for details. The break down log is checked and there is no major breakdown during the monitoring period. No unforced error observed. No sampling procedure applied for monitoring of the data parameter and entire documents were checked by the assessment team to arrive at positive verification conclusions. The monitoring plan is followed at the project site. Thus, assessment team concluded that the evidences are sufficient in quantity, and appropriate for the quality, to determine the GHG reductions and removals.

4.6 Non-Permanence Risk Analysis

No.	Risk that could lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk level	Justification	
NA	NA	NA	NA	NA

5 VERIFICATION CONCLUSION

Applus+ Certification has been engaged by Mytrah Vayu (Pennar) Private Limited (MVPPL) to perform the 5th periodical verification of the "Vajrakarur wind power project in Andhra Pradesh".

The management of Mytrah Vayu (Pennar) Private Limited (MVPPL) is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the project's Monitoring Plan in the registered PD/05/ and the applied methodology ACM0002 - Version 13.0 /09/.

Our verification approach was based on the requirements as defined under the Kyoto Protocol, Marrakesh accord, as well as those defined by the CDM Executive Board. Our approach is risk-based, drawing on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these. Further, the verification has been planned and organized to achieve a Reasonable Level of assurance as per the requirement of VCS. No sampling procedure applied for document verifications. The entire documents checked/Power plant verification conducted to arrive at positive verification conclusions. The verification team can confirm that:

- the project is operated as planned and described in the project document;
- the monitoring plan is as per the applied methodology;
- the monitoring process in Monitoring report /11/ is as per the PD/05/
- the development and maintenance of records and reporting procedures are in accordance with the monitoring plan;
- the installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately;
- the monitoring system is in place and generates GHG emission reductions data;
- the GHG emission reductions are calculated without material misstatements.
- A Reasonable Level of assurance was achieved as planned, during verification process.
- Verification period: 01-June-2021 to 28-February-2022 (inclusive of both days)

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

Year	Baseline emissions or removals (tCO_2e)[9]	Project emissions or removals (tCO_2e)	Leakage emissions (tCO_2e)	Net GHG emission reductions or removals (tCO_2e)
01-June-2021 to 31-December-2021	53,089	0	0	53,089
01-January-2022 to 28-February-2022	6,796	0	0	6,796
Total	**59,885**	**0**	**0**	**59,885**

Date: 12-July-2022

Lead Auditor: Dr. Atul Takarkhede

Tech. Expert: Dr. Atul Takarkhede

Auditor: NA

Tech. Reviewer: Mr. Simon Shen

ASSESSMENT TEAM	
Team Leader Dr. Atul Takarkhede	**Technical Reviewer:** Mr. Simon Shen
Signature:	Signature:
Approver: Mr. Agustín Calle de Miguel (VVB Technical Manager)	
Signature:	

[9]Rounddown values

APPENDIX 1: DOCUMENTS REVIEWED OR REFERENCED (VERIFICATION)

No.	Author	Title	References to the document	Provider
1.	Central Power Distribution company of AP limited	Commissioning certificates of the WTGs implemented in the project site.	NA	Project participant
2.	Applus	Contract of the project participant with the DOE	Contract document signed between PP and DOE	Project participant
3.	Suzlon	Technical specifications of wind turbine generators S-88 from Suzlon	Manufacturer technical specifications	Project participant
4.	PP	Power Purchase agreement for the project activity	NA	Project participant
5.	PP	Registered VCS PDD Registered CDM PDD	version 4, dated 20-April-2014 version 2.8, dated 23-May-2013	UNFCCC
6.	SGS	VCS Previous MP Validation report	version 1.4, dated 30-May-2013	UNFCCC
7.	KBS Certification	Previous VCS verification report *https://registry.verra.org/app/projectDetail/VCS/1214*	Report id VCS.21.VER.027 – A, dated 12-August-2021	Project participant
8.	NA	Ministry of Environment and forest: www.envfor.nic.in UNFCCC www.cdm.unfccc.int CEA: Central electricity authority www.cea.nic.in VCS: Verified Carbon Standard www.v-c-s.org	Reference link is provided.	Independent Search
9.	UNFCCC and VCS	Tools/ guidelines used in the project activity • CDM Methodology ACM0002 - Version 13.0 • Tool to determine the remaining lifetime of the project activity in line with Annex 15 EB 50 • Tool to calculate the emission factor for an electricity system • Glossary of CDM terms version 07 • VCS standard Version 4.2 • VCS Program Guide 4.1 • VCS verification report template version 4.1	UNFCCC CDM web site VCS Website	UNFCCC

No.	Author	Title	References to the document	Provider
10.	AP TRANSCO	JMR/Credit notes records for the complete monitoring period	JMR records	Project participant
11.	PP	Draft MR version 01 MR version 02 Final MR version 03	13-April-2022 04-May-2022 12-July-2022	Project participant
12.	PP	Emission Calculation sheet version 01 Emission Calculation sheet version 02	13-April-2022 04-May-2022	Project participant
13.	PP	Invoices for the complete monitoring period	-	Project participant
14.	O&M entity	Break down details of the complete monitoring period	Log sheet	Project participant
15.	PP	Self-Declaration from PP for not participating/ claiming other emission reduction programme	12-April-2022	Project participant

APPENDIX 2: CORRECTIVE ACTION REQUESTS, CLARIFICATION REQUESTS AND FORWARD ACTION REQUESTS (CAR/CL/FAR)

Project Implementation Status

CL ID	01	Section no.	4.4	Date: 28-April-2022
Description of CL				
Monitoring report is not clear about apportioning procedure applied for the mis-match between dates of the JMRs of first & last months and start & end dates of this monitoring period. Thus, PP requested to clarify how apportioning is applied inline with the PDD, for the mis-match between start & end dates of this monitoring period and dates of the monthly statements generated by the state utility. Kindly clarify.				
Project participant response				Date: 04-April-2022

The monitoring period differs from billing cycle so the deviation is applied in the revised MR Version 2.0 for monitoring plan The billing cycle is from 3rd to 3rd, hence for first and last month apportioning is required, the deviation applied is as follows- ***Data Adjustment in case of monitoring period different from billing period.*** *In case the dates of a particular monitoring period do not match with the dates of the billing period, the net electricity exported to the grid would be calculated as follows:* *D = (A/B) *C* *Where:* *A = Difference of number of days which are not matching of billing period and monitoring period.* *B = Number of days of the billing period/ month which was not matched with the monitoring period.* *C = Net Electricity supplied to the grid for that given billing period/ month.* *The calculated value after apportioning used for calculation of emission reductions during that period. Based on the above procedure, the Monthly Certificate for Share of Electricity Generated shall be provided to the project participant. This is to be noted that the detail procedure of monitoring is illustrated here for the sake of understanding; for the preparation of monitoring report during periodic verifications, only the net electricity generation value mentioned in monthly wind energy certificates shall be directly used for emission reduction calculation. No other parameters as explained above shall be used and presented in the monitoring report.*
Documentation provided by project participant
1.Revised ER Sheet *2.Revised MR Version 2.0*
DOE assessment — **Date:** 17-May-2022
As PP has clarified apportioning method in section 3.2.2 of revised MR described as above formula D = (A/B) *C to get the net energy export and same has been demonstrated in emission reduction sheet for mismatch between dates of JMR's first & last date and start and end date of monitoring period which is found conservative and inline with the registered PD. Further, deviation does not cause any change in design. hence acceptable to assessment team. **CAR Closed.**

CAR ID	01	**Section no.**	4.1	**Date:** 30-April-2022
Description of CAR				
During review of monitoring report following inconsistencies observed: 1. Editorial mistakes are observed in the MR submitted by PP. Thus, PP requested to submit corrected MR as per comments provided in monitoring report. Kindly submit. 2. Section 1.1, 2.3 and 3.1 of monitoring report is found not inline with the VCS MR template guideline version V 4.1. Thus, corrective action sought.				
Project participant response				**Date:** 04-April-2022
1.Revised MR Version 2.0 is corrected as per revised MR Version 2.0 *2.Requested changes in section 1.1,2.3 and 3.1 of monitoring report is now made inline with the VCS MR template guideline V4.1 in revised MR Version 2.0*				
Documentation provided by project participant				
Revised MR Version 2.0				
DOE assessment				**Date:** 17-May-2022

1. PP has corrected the editorial mistakes in revised monitoring report. And submit corrected MR as per comments provided in monitoring report. Thus, CAR is Closed. 2. Section 1.1, 2.3 and 3.1 of revised monitoring report is now made consistent with the VCS MR template guideline version V 4.1. Thus, CAR is Closed.

CAR ID	02	Section no.	4.1	Date: 30-April-2022
Description of CAR				
PP requested to submit copies of technical specifications WTGs, O&M agreement Kindly submit.				
Project participant response				**Date:** 04-April-2022
Following documents are submitted herewith- *1) WTGs Specification* *2) O and M agreement*				
Documentation provided by project participant				
1) WTG specification *2) O and M agreement*				
DOE assessment				**Date:** 17-May-2022
PP has submitted following documents: - 1. Brochure of technical specification of WTGs involved in project activity and link included in revised monitoring report. 2. Operation and maintenance agreement between PP and Suzlon energy limited for all sites of project activity. Above document found inline with revised MR and registered PD. Thus, accepted and **CAR is closed.**				

CAR ID	03	Section no.	4.1	Date: 30-April-2022
Description of CAR				
Project Proponent has mentioned in Section 1.9 of the VCS MR that project is registered under CDM, however not considered the credit from CDM or any other mechanism for the current monitoring plan. PP requested to submit supporting document regarding the same				
Project participant response				**Date:** 04-April-2022
No double counting declaration is submitted herewith				
Documentation provided by project participant				
Declaration for no double counting				
DOE assessment				**Date:** 17-May-2022
PP has submitted "No Double Counting" undertaking dated 12-April-2022 and confirmed that no double counting of GHG reduction has been claimed for current monitoring period in the other GHG trading programmes and REC mechanism of India. Thus, **CAR thus closed.**				

CAR ID	04	Section no.	4.1	Date: 30-April-2022
Description of CAR				
Project Proponent has mentioned in table 1 of MR under "SDG 8.6.1" that "the Project Proponent provided employment to 11 peoples and 1 training. Thus, PP requested to submit documentary evidence for provided employment during for same during current monitoring period. Further, PP requested to complete the section inline with VCS Standard, Version 4.2 and submit records for verification accordingly. Corrective action sought.				
Project participant response				**Date:** 04-April-2022
As evidence for SDG 8.6.1 the following documents are submitted- a) Declaration by PP for employment b) Training details				
Documentation provided by project participant				

a) Declaration by PP for employment b) Training details
DOE assessment **Date:** 17-May-2022
PP has submitted self-attested declaration related to SDG goals achieved by project activity. VVB team verified the same and found inline with the revised MR. hence, accepted and **CAR is closed.**

CAR ID	05	**Section no.**	4.2.2	**Date:** 30-April-2022
Description of CAR				
PP requested to submit records for ongoing local stakeholder consultation including grievance register as per requirement of para 3.17.4 and 3.17.5 of the VCS standard V.4.2. to assessment team. Kindly submit				
Project participant response				**Date:** 04-April-2022
Grievance register is submitted herewith				
Documentation provided by project participant				
Grievance register				
DOE assessment				**Date:** 17-May-2022
PP has submitted records for ongoing local stakeholder consultation including grievance register as per requirement of para 3.17.4 and 3.17.5 of the VCS standard V.4.2. to assessment team. Found no major grievance raised by local stakeholder during the verification. Thus, accepted and **CAR is closed.**				

Accuracy of GHG Emission Reduction and Removal Calculation

CAR ID	06	**Section no.**	4.4	**Date:** 30-April-2022
Description of CAR				
PP has submitted Emission Reduction sheet to assessment team. For verification of same submitted JMRs and sales invoices relevant to current monitoring period of project activity. However, during assessment team found unit of measured electricity mentioned in ER sheet is not inline with JMR. Thus, corrective action sought.				
Project participant response				**Date:** 04-April-2022
The unit of measured electricity is Kwh , which is corrected in ER sheet				
Documentation provided by project participant				
Revised ER Sheet *JMR* *Invoices*				
DOE assessment				**Date:** 17-May-2022
PP has submitted all JMRs &invoices for the current monitoring period and the values of net electricity supplied is found consistent. Hence accepted. Thus, **CAR is Closed**.				

Quality of Evidence to Determine GHG Emission Reductions and Removals

CAR ID	07	**Section no.**	4.5	**Date: 30-April-2022**
Description of CAR				
PP has provided detailed information of metering equipment like serial number, make, calibration date and validity of calibration and calibration frequency in MR. to verify same, supporting documents of electricity meters and calibration certificate submitted by PP. However, calibration date is not inline with the previous verification report and accordingly apply the calibration delay factor in ER calculation sheet, calibration of meter is not covering complete monitoring period, however for delayed period error factor is missing in ER sheet. Thus, corrective action sought.				
Project participant response				**Date:** 04-April-2022

The calibration is not delayed , there was some human error in mentioning calibration dates , which has been corrected in the Revised MR Version 2.0	
Documentation provided by project participant	
Revised MR version 2.0	
DOE assessment	**Date:** 17-May-2022
PP has submitted revised monitoring report updated calibration frequency accuracy class and meter details in appendix 1 and also the Calibration certificate to the assessment team issued by the Yathava energy solution private Limited. During review, Delay in schedules calibration has been observed. Thus, as per the conservative approach, error factor of 0.2% is applied to the complete month of the delay period. Found acceptable and Thus, **CAR is Closed.**	

APPENDIX 3: COMPETENCE OF TEAM MEMBERS AND TECHNICAL REVIEWERS

Verification team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk review	On-site inspection	Interview(s)	Verification findings
1.	Lead Auditor/Technical Expert	OR	TAKARKHEDE	ATUL	TQC-Outsourced entity	Yes	Yes	Yes	Yes

Technical reviewer and approver of the verification and certification report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer (TR) / Technical Expert (TE)	EI	Shen	Simon	Applus+ Certification
2.	Approver	IR	Calle de Miguel	Agustín	Applus+ Certification

Short CVs of the Team:

1. Dr. Atul Takarkhede is Ph.D. (Environmental Sciences) from Institute of Science, RTM Nagpur University, Nagpur, and he has already published different technical papers related to environmental sciences. He counts with more than 11 years of experience in field of Environmental Auditing, consulting and accreditation. He is an expert in ISO 9001-14001, CO2/GHG Reporting, Carbon Foot Print, Energy, Water and Waste Management reporting for organizations' environmental performance. His professional portfolio is mainly related with carrying out EIA, conducting QA/QC of EIA Reports; conducting environmental/water audits; NABET requirements appliance, functional area expert in Water Pollution & Solid & Hazardous Waste management among others. Furthermore, he counts with solid experience on CDM-VCS-GS consultancy and auditing. Currently he is associated with True Quality Certifications Private Limited and empanelled with Applus+ Certification to carry out GHG audits in the aforementioned schemes.
2. Mr. Simon Shen (Master's Degree in Thermal Energy Engineering, Bachelor's Degree in Environmental Engineering) is an Auditor appointed by Applus+ LGAI for the GHG project assessment, auditing and technical review. He has more than 6 years of work experience in CDM/GS4GG/VCS project assessment and review with Applus+, apart from the years of experience

working as GHG Auditor and ISO 9001/14001 in TUV SUD for 3.5 years before he joined Applus+. Mr. Simon Shen has extensive experience also as former Applus+ Shanghai CDM Technical Manager.

APPENDIX 4: ABBREVIATIONS

Abbreviations	Full texts
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction(s)
CEA	Central Electricity Authority
CL	Clarification request
CM	Combined Margin
CMS	Central Monitoring system
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
DNA	Designated National Authority
DOE	Designated Operational Entity
DR	Document Review
EF	Emission Factor
EIA	Environmental Impact Assessment
ER	Emission Reductions
FAR	Forward Action Request
GHG	Greenhouse gas(es)
GWP	Global Warming potential
AP TRANSCO	Transmission Corporation of Andhra Pradesh
PP	Project Participant

APPENDIX 5: CALIBRATION DETAILS OF THE METERS

Calibration Details of the WTGs installed in the project activity is provided below:

WTG ID	Capacity	Main Meter	Check meter	Make	Accuracy Class	Previous Calibration date	Due date	Calibration date	Due date	Delay period	Error Factor applied
VAR 38, VAR39, VAR 40, VAR209, VAR18, VAR 208, VAR 23,VAR 024 (Phase 1 WTGs)	16.8	00190027771 1	001900 2780	L&T	0.2s	26-November-2020	25-November-2021	12-January-2022	11-January-2023	26-November-2021 to 11-January-2022	November-2021 to January-2022
VAR204, VAR15, VAR16, VAR205, VAR10 ,V K108, VK09, VK110 (Phase 2 WTGs)	16.8	00190094851 2	001900 2785	L&T	0.2s	21-November-2020	20-November-2021	22-January-2022	21-January-2023	21-November-2021 to 21-January-2022	November-2021 to January-2022
VAR217, VAR216 ,V AR26 (Phase 3 WTGs)	6.3	00190016901 3	001900 1701	L&T	0.2s	21-November-2020	20-November-2021	21-January-2022	20January-2023	21-November-2021 to 20-January-2022	November-2021 to January-2022
VAR 22,VAR 29, VAR19(Phase 4 WTGs)	6.3	00190001702	002000 3301	L&T	0.2s	21-November-2020	20-November-2021	29-January-2022	28-January-2023	21-November-2021 to 28-January-2022	November-2021 to January-2022
VAR203, VAR300 (Phase 5 WTGs)	4.2	00190016571 5	001900 1666	L&T	0.2s	21-November-2020	20-November-2021	22-January-2022	21-January-2023	21-November-2021 to 21-January-2022	November-2021 to January-2022

VAR50, VAR51 (Phase 6 WTGs)	4.2	001900 167716	001900 1682	L&T	0.2s	26-November-2020	25-Novmber-2021	28-January-2022	27-January-2023	26-November-2021 to 27-January-2022	November-2021 to January-2022
VAR30, VAR28, VAR27 (Phase 7	6.3	001900 6559	001900 6560	L&T	0.2s	26-November-2020	25-Novmber-2021	12-January-2022	11-January-2023	26-November-2021 to 11-January-2022	November-2021 to January-2022
VAR 37 (Phase 8 WTGs)	2.1	001900 279818	001900 2799	L&T	0.2s	26-November-2020	25-Novmber-2021	12-January-2022	11-January-2023	26-November-2021 to 11-January-2022	November-2021 to January-2022

Metering details at 33/220 KV pooling station

Main Meter	Check Meter	Make	Accuracy Class	Calibration Date	Calibration Due Date	Calibration Date	Calibration Due Date	Delay period
XC559940	XC559941	Secure	0.2s	18-February-2020	17-February-2021	18-February-2021	17-February-2022	No delay observed