



**Verified Carbon
Standard**

**15 MW BUNDLED GRID-CONNECTED
WIND ELECTRICITY GENERATION
PROJECT IN RADHAPURAM TALUK OF
TIRUNELVELI DISTRICT IN
TAMIL NADU, INDIA**

Document Prepared By



Certification Pvt. Ltd.

VKU Certification Pvt. Ltd.

Regd. Off: Flat No. 306, Sky Star, N-1, New Rani Bagh Khandwa Road, Indore, Madhya Pradesh, India - 452020

URL: <http://vkucertification.com> | e-mail: info@vkucertification.com

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Prepared By	VKU Certification Pvt. Ltd.
Contact	Regd. Off: Flat No. 306, Sky Star, N-1, New Rani Bagh Khandwa Road, Indore, Madhya Pradesh - 452020 URL: http://vkucertification.com e-mail: info@vkucertification.com
Approved By	Dr. Vikas Kumar Aharwal (Founder and Director) vikas.aharwal@vkucertification.com
Work Carried Out By	Team Leader cum Technical Expert TA 1.2: Sanjay Kumar Validator/Verifier-Trainee: Niharika Kaushik Technical Reviewer cum Technical Expert TA 1.2: Vivek Kumar Ahirwar

Summary:

M/s VKU Certification Pvt. Ltd. (hereafter referred as VKU) was commissioned by M/s EKI Energy Services Limited (hereafter referred as EKI) has verified the greenhouse gas emission reductions reported for the project activity “15 MW Bundled grid-connected wind electricity generation project in Radhapuram Taluk of Tirunelveli District in Tamil Nadu, India” (VCS ID 314¹) in India, covering second monitoring period from 28-March-2012 to 27-March-2016 (Inclusive of both start and end dates) under fixed crediting period from 28-March-2006 to 27-March-2016 (Inclusive of both start and end) with regard to the relevant requirements for VCS activities.

The purpose of the verification is to have an independent review of ex-post determination of the monitored reductions in GHG emission reductions and verify that the monitoring methodology was implemented according to the monitoring plan and monitoring data used to confirm the reductions in anthropogenic emissions by sources is sufficient, definitive and presented in a concise and transparent manner.

The verification scope of the project is:

- To verify that the project is implemented as described in the registered VCS PD/3/.
- To assess the project’s compliance with other relevant rules including the host country legislation.
- To confirm that the monitoring system is implemented and fully functional to generate voluntary emission reductions without any double counting.
- To establish that the data reported are accurate, complete, consistent, transparent and free of material error or omission by checking the monitoring records and the emissions reduction calculation.
- To verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan;
- To evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement;
- 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 4.2/4/, VCS Standard Version 4.3/5/, VCS Validation and Verification Manual version 3.2/6/, CDM M&P, the latest version of the CDM Validation and Verification Standard 3.0/7/, and relevant decisions of the COP/MOP and the CDM EB viz., the requirements of Article 12 of the

¹<https://registry.terra.org/app/projectDetail/VCS/314>

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, sustainability criteria along with VCS standard version 4.3 and applying standard auditing techniques. The verification consisted of desk review, on-site assessment and the resolution of outstanding issues and the issuance of the final verification report and certification. The verification shall ensure that reported emission reductions are complete and accurate in accordance with applicable VCS requirements in order to be certified.

VKU followed the rule-based approach to perform this verification. During verification, related to operation, monitoring and GHG emission reduction calculation of the VCS project activity in relation to all relevant VCS requirements for the project activity and the applied baseline and monitoring methodology and a total of 05 findings were raised, which includes: 04 Corrective Action Request (CARs); 01 Clarification Requests (CLs) and 00 Forward Action Requests (FARs). 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 in accordance with applicable VCS requirements to be certified therefore the verification team has detected no further uncertainties.

The GHG emission reductions were calculated based on the approved methodology AMS- I.D.- Version 14: Grid connected renewable electricity generation/8/ and Tool to calculate the emission factor for an electricity system; Version 01.1 /16/ and the monitoring plan included in the registered VCS PD (version 05) dated 03-November-2009/3/

In conclusion, it is VKU's opinion that the project activity "15 MW Bundled Grid-Connected Wind Electricity Generation Project in Radhapuram Taluk of Tirunelveli District in Tamil Nadu, India" (VCS ID 314) in India meets all relevant requirements for VCS standard version 4.3 /5/and guidelines and correctly applies the baseline and monitoring methodology AMS- I.D.- Version 14: Grid Connected Renewable Energy Generation /8/. The monitoring system is in place and the emission reductions are calculated without material misstatement.

Hence, VKU is able to certify that the emission reductions from the project during the second monitoring period from 28-March-2012 to 27-March-2016 (Inclusive of both start and end dates) under fixed crediting period (28-March-2006 to 27-March-2016) (Including both dates) amount to 71,419 tCO₂e.

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1 INTRODUCTION

1.1 Objective

M/s EKI Energy Services Limited(hereafter referred as EKI) Commissioned M/s VKU Certification (here after referred as VKU) to carry out second verification of the project “15 MW Bundled grid-connected wind electricity generation project in Radhapuram Taluk of Tirunelveli District in Tamil Nadu, India” (VCS ID 314) project in India for the period from 28-March-2012 to 27-March-2016 (Inclusive of both start and end dates) under fixed crediting period from 28-March-2006 to 27-March-2016 (Inclusive of both dates) .

This report summarizes the findings of the verification of the project, performed based on VCS Requirements, as well as criteria given to provide for consistent project operations, monitoring and reporting as per VKU’s standard procedure for verification which is in line with VERRA standard version 4.3 for verification.

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 4.2 /4/, VCS standard version 4.3 /5/ and GHG program applied, on the basis of the registered project design document. Version 05/3/.

This is the second verification of fixed crediting period (**28-March-2006² to 27-March-2016**), Inclusive of both start and end dates) for a period of four years from 28-March-2012 to 27-March-2016 (Inclusive of both start and end dates). The project activity adopts fixed crediting period from of 10 years period as mentioned in section 1.6 of VCS PD version 05 dated 03-November-2009/3/.

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

- The project activity has been implemented and operated as per the project description (PD) /3/ & MR /1/ and that all physical features (technology, project equipment, and monitoring and metering equipment) of the project are in place.
- Monitoring report and other supporting documents are complete.
- The data is recorded and stored as per the monitoring methodology and approved monitoring plan.

² As per Validation report for the project activity Version 05 Issue date 06-November-2009, a corrective action request was raised that says that as per section 5.2.1 of the VCS 2007.1 standard, the crediting period start date cannot be earlier than 28-March-2006, hence though the first wind mill was installed on 31-March-2003 the crediting period start date of the project activity is **28-March-2006**

To confirm that the monitoring system is implemented and fully functional to generate Verified Carbon Units (VCUs) without any double counting /23/, and to establish that the data reported are accurate, complete, consistent, transparent and free of material error or omission by checking the monitoring records and the emissions reduction calculation.

1.2 Scope and Criteria

The verification scope is:

- To verify that the project is implemented as described in the registered VCS PD/3/
- To assess the project's compliance with other relevant rules including the host country legislation.
- To confirm that the monitoring system is implemented and fully functional to generate voluntary emission reductions without any double counting.
- To establish that the data reported are accurate, complete, consistent, transparent and free of material error or omission by checking the monitoring records and the emissions reduction calculation.
- To verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan;
- to evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement;
- to verify that reported GHG emission data is sufficiently supported by evidence

The verification shall ensure that the reported emission reductions are complete and accurate to be certified.

The project is assessed against the requirements of VCS standard version 4.3 /5/, VCS program guide version 4.2 /4/, VCS validation and verification manual version 3.2 /6/ and related rules and guidance. VKU has, based on the recommendations in the latest version of CDM Validation and Verification Standard/7/, VCS validation and verification manual and employed a rule-based approach (as criteria) in the verification, focusing on the identification of significant reporting rules and the reliability of project monitoring.

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

The method and criteria used for verification consisted of the following phases:

- Completeness check and desk review;
- Onsite interviews with stakeholders;

Resolution of outstanding issues and issuance of final verification report and applicable VCS Validation and Verification Deeds of Representation.

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

Table No 01: The Assessment Team comprises of

Role/Qualification of Assessment Team	Last Name	First Name
VCS Team Leader, VCS Verifier & Technical Expert TA 1.2	Kumar	Sanjay
Validator/Verifier Trainee	Kaushik	Niharika

Table No 02: The Technical 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

The project activity involves electricity generation by Wind Turbine Generators (WTGs). The energy generated from the wind energy generators (WEGs) was transmitted to the high-tension industry premises of the company /its subsidiary company by using the transmission lines of Tamil Nadu state Electricity Board. The project being a renewable energy generation activity, it leads to removal of fossil fuel dominated electricity generation. The project employs wind energy for generating electricity which have been otherwise generated through substitute fuels (most likely - fossil fuel) based power plants thus, contributing to reduction in specific emissions (emissions of pollutant) including GHG emissions. The project activity results in reductions of greenhouse gas (GHG) emissions that are real, measurable, and verifiable and also plays beneficial role in the mitigation of climate change.

This project activity is bundled wind power project consists of 12 Suzlon S64 (1250kW) WTGs with capacity 1.25 MW each of total generating capacity of 15 MW located in Radhapuram Taluk of Tirunelveli District in Tamil Nadu, India. The four companies, Sangeeth Textiles Ltd, Shree

Mookambiga Spinning Mills Ltd, CAV Cotton Mills Ltd, are owned by the four members of the same family. M/s. Sangeeth Textiles Ltd Agreed to act as the coordinating agency for the project activity. Location of the project was verified through Google Earth³/28/ during the desk review and GPS Map Camera/27/ during the site visit as well as through recorded live coordinates by onsite assessment team and found consistent with the data provided in the registered VCS PD /3/.

The purpose of the project activity is generation of clean electricity by utilizing kinetic energy of wind which is converted into mechanical energy and subsequently into electrical energy. As per MR, the electricity generated from the wind energy generators (WEGs) would be transmitted to the high-tension industry premises of the company /its subsidiary company by using the transmission lines of Tamil Nadu state Electricity Board as per VCS PD/3/and interview with PP/29/.

The starting date of the operation of the project activity is 31-March-2003

The earliest date of commissioning of the wind mill is 31-March-2003 of the project activity and 31-March-2006 which is date of the commissioning of the last WTG of the project activity and dates are verified against registered VCS PD /3/ and commissioning certificates/24/.

By document review and on-site interview with PP representative's present onsite of the project activity, the verification team confirms that all the components of installed technology are fully functional and found to be in line with the details provided in the registered VCS PD /3/. The total emission reductions achieved in this monitoring period i.e., from 28-March-2012 to 27-March-2016 (first and last days included) is 71,419 tCO₂e/2/.

2 VERIFICATION PROCESS

The registered VCS project is undergoing periodic verification under VCS, 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 4.2 /4/, VCS standard document version 4.3 /5/. The project activity does not fall under category "grouped projects", hence no sampling methods was employed by the validation/verification body for the verification of GHG emission reductions or removals generated by the project.

The GHG emission reductions are based on the approved Baseline and monitoring methodology AMS- I.D: "Grid connected renewable electricity generation" version 14/8//During onsite visit/30/

³<https://earth.google.com>

verification team reviewed 100% data for all the WEGs involved in this project at site and hence no sampling is involved.

Scope: 01 Energy Industries (renewable- and non-renewable sources) Title: “Grid Connected Renewable Electricity Generation”.

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

- Tool to calculate the emission factor for an electricity system, Version 01.1 /16/
- Tool for the demonstration and assessment of additionality, Version 05.2 /33/

The verification consisted of the following three phases.

- Document review;
- On-site assessment including Interviews and actual project scenario;
- Resolution of any Material Discrepancy and the issuance of the final verification report and certification

The following sections outline each step in more detail.

2.2 Document Review

The VCS monitoring report (MR) version 1.0 of 28-September-2022, version 2.0 of 19-January-2023, version 3.0 of 14-February-2023 and final version 4.0 of 24-February-2023 the emission reduction calculations spreadsheet version 01 of 28-September-2022, version 2.0 of 19-January-2023 /2/version 3.0 of 14-February-2023 and final version 4.0 of 24-February-2023 were assessed as part of the verification. In addition, registered VCS PD version 05/3/ in particular the baseline estimations and the monitoring plan for the project was reviewed.

Table No 03: The following table lists the documentation that was reviewed during the verification:

/1/	EKI: VCS monitoring report for “15 MW Bundled grid-connected wind electricity generation project in Radhapuram Taluk of Tirunelveli District in Tamil Nadu, India” in India, Version 1.0 of 28-September-2022 Version 2.0 of 19-January-2023 Version 3.0 of 14-February-2023 Version 4.0 of 24-February-2023
/2/	EKI: Emission Reduction Calculation Spreadsheet,

	Version 1.0 of 28-September-2022 Version 2.0 of 19-January-2023 Version 3.0 of 14-February-2023 Version 4.0 of 24-February-2023
/3/	Registered VCS PD for the project ‘15 MW Bundled grid-connected wind electricity generation project in Radhapuram Taluk of Tirunelveli District in Tamil Nadu, India’: version 5 of 03-November-2009 https://registry.terra.org/mymodule/ProjectDoc/Project_ViewFile.asp?FileID=1697&IDKEY=a903q4jsafkasjfu90amnmasdfkaidflnmdf9348r09dmfasdf12340163
/4/	VCS: VCS Program Guide, version 4.2 of 22-June-2022
/5/	VCS: VCS Standard, version 4.3 of 22-June-2022
/6/	Validation and verification manual version 3.2 dated 19-October-2016
/7/	CDM Validation and Verification Standard version 3.0 dated 09-September-2021
/8/	CDM Executive Board: Baseline and Monitoring Methodology “AMS I.D”, “Grid Connected Renewable Electricity Generation” version 14.0 https://cdm.unfccc.int/UserManagement/FileStorage/UQ8WZYCH5IVSPBNF2760MGE10TDX9A
/9/	VCS Validation report by Perry Johnson Registrars CDM INC. for project ‘15 MW Bundled grid-connected wind electricity generation project in Radhapuram Taluk of Tirunelveli District in Tamil Nadu, India’ Version 05 on date 06-November-2009 https://registry.terra.org/mymodule/ProjectDoc/Project_ViewFile.asp?FileID=1698&IDKEY=898klasmf8jflkasf8098afnasfkj98f0a9sfsakjflsakjf8d02341542
/10/	LGAI Technological Center, S.A (Applus+ Certification): VCS Verification Report “15 MW Bundled grid-connected wind electricity generation project in Radhapuram Taluk of Tirunelveli District in Tamil Nadu, India” for monitoring period: 28-March-2006 to 27-March-2012 (Inclusive of both start and end dates) Version 02 dated 20-February-2023
/11/	VERRA: Project search: https://verra.org/verra-standards-and-programs/
/12/	UNFCCC: Project search: https://cdm.unfccc.int/Projects/projsearch.html
/13/	REC website Renewable Energy Certificate Registry of INDIA (Renewable Energy Certificate Registry of INDIA - Registered RE Generator List (recregistryindia.nic.in))

/14/	Gold Standard Foundation: https://registry.goldstandard.org/projects?q=&page=1
/15/	Environmental Impact Assessment (EIA) Notification, Ministry of Environment, Forest and Climate Change (MoEF & CC), Government of India, New Delhi, the 14-September-2006 http://www.environmentwb.gov.in/pdf/EIA%20Notification.%202006.pdf
/16/	Tool to calculate the emission factor for an electricity system. (Version 01.1). (unfccc.int)
/17/	CO ₂ Baseline Database for the Indian Power Sector User Guide Version 4.0 https://cea.nic.in/wpcontent/uploads/baseline/2020/07/user_guide_ver4.pdf
/18/	Central Electricity Authority Home page - Central Electricity Authority (cea.nic.in) 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)
/19/	Wheeling Agreements signed between Project Proponent and state electricity authority TANGEDCO (Tamil Nadu Generation and Distribution Corporation) 1. Wheeling Agreement made at Tirunelveli on 30th-March-2006 between Tamil Nadu Electricity Board body corporate constituted under the electricity (Supply) Act 1948 herein after called Board and Sri Mookambiga Spinning Mills Pvt Ltd herein after called the company for WEG HT SC No 1749 2. Wheeling Agreement made at Tirunelveli on 4th-March-2004 between Tamil Nadu Electricity Board body corporate constituted under the electricity (Supply) Act 1948 herein after called Board and Sri Mookambiga Spinning Mills Pvt Ltd herein after called the company for WEG HT SC No 675 & 676 3. Wheeling Agreement made at Tirunelveli on 31st-March-2003 between Tamil Nadu Electricity Board body corporate constituted under the electricity (Supply) Act 1948 herein after called Board and Sangeeth Textiles Limited herein after called the company for WEG HT SC No 550 4. Wheeling Agreement made at Tirunelveli on 31st-March-2004 between Tamil Nadu Electricity Board body corporate constituted under the electricity (Supply) Act 1948 herein after called Board and Sangeeth Textiles Limited herein after called the company for WEG HT SC No 830

	5. Wheeling Agreement made at Tirunelveli on 31st-March-2006 between Tamil Nadu Electricity Board body corporate constituted under the electricity (Supply) Act 1948 herein after called Board and Sangeeth Textiles Limited herein after called the company for WEG HT SC No 1783 6. Again a Wheeling Agreement was made at Tirunelveli on 10-May-2013 between Tamil Nadu Generation and Distribution Corporation Ltd. and Sangeeth Textiles Limited herein after called the company for WEG HT SC No 550//830//1783 7. Wheeling Agreement was made at Tirunelveli on 10-May-2013 between Tamil Nadu Generation and Distribution Corporation Ltd. and Sri Vasudeva Textiles Limited herein after called the company for WEG HT SC No 1660/548//745 8. Wheeling Agreement was made at Tirunelveli on 24-March-2006 between Tamil Nadu Generation and Distribution Corporation Ltd. and CAV Cotton Mills Limited herein after called the company for WEG HT SC No 1654 9. Wheeling Agreement was made at Tirunelveli on 10-May-2013 between Tamil Nadu Generation and Distribution Corporation Ltd. and CAV Cotton Mills Limited herein after called the company for WEG HT SC No 656 10. Wheeling Agreement was made at Tirunelveli on 31-December-2011 between Tamil Nadu Generation and Distribution Corporation Ltd. and CAV Cotton Mills Limited herein after called the company for WEG HT SC No 1659 All the Wheeling Agreements made so far by the PP with state entity is stated .
/20/	Certificates of Calibration for all the meters issued by TNEB (Tamil Nadu Electricity Board)/TANGEDCO (Tamil Nadu Generation and Distribution Corporation) Calibration Dates during current monitoring period are as follows: 1. The calibration for all the below stated meters was done on 25-April-2016

	For HTSC No: 1783//550//830 (All these Meters are covered under PP: Sangeeth Textiles Limited, For HTSC No: 1660//548//745 (All these Meters are covered under PP: Sri Vasudeva Textiles 2. The calibration for all the below stated meters was done on 24-December-2011 & 25-April-2016 For HTSC no: 1749//675//676 (All these Meters are covered under PP: Sri Mookambiga Spinning Mills Pvt Ltd. For HTSC no: 656//655//1659 (All these Meters are covered under PP: CAV Cotton Mills Ltd
/21/	Joint Meter Readings/Power Export Bills issued by TNEB (Tamil Nadu Electricity Board)/TANGEDCO (Tamil Nadu Generation and Distribution Corporation) for state of Tamil Nadu for the current verification period. 28-March-2012 to 27-March-2016 (Inclusive of both start and end dates)
/22/	Monthly Generation Reports of the project for the current Monitoring Period. 28-March-2012 to 27-March-2016 (Inclusive of both start and end dates)
/23/	Letter of declaration dated 22-September-2022 from PP regarding not having created or sought any other form of environmental credit for the current monitoring period (28-March-2012 to 27-March-2016, first and last date included)
/24/	Commissioning certificate of all the WTGs of the project activity issued by state electricity authority: TANGEDCO (Tamil Nadu Generation and Distribution Corporation)/ TNEB (Tamil Nadu Electricity Board) For detailed information regarding the commissioning of the WTGs please refer the <u>Table no 08</u> on Page no 23
/25/	Technical Specifications of WTGs (Wind Turbine Generators) specified by the supplier of WTGs i.e. Suzlon Energy Limited
/26/	Grievance Register as present on-site during current monitoring period (28-March-2012 to 27-March-2016, first and last date included) More information related to the same has been included in <u>Section 4.2.2</u> of this report
/27/	GPS map camera (<u>GPS Map Camera: Geotag Photos & Add GPS Location</u>)
/28/	GPS Google earth software used for Location; https://earth.google.com/web/https://earth.google.com/earth/d/1ON7BOcv4ruCxVvbPgfrWIAysu010-5tg?usp=sharing

/29/	Onsite Personnel Interviews and Focussed Group Discussions detailed in section 2.3 of this report.as recorded by VVB i.e. VKU Certification Pvt Ltd during onsite visit in a form called as VKU.F46W. Attendance Sheet of Onsite audit
/30/	Onsite visit on on 27-October-2022; Thursday to Project implemented site i.e. Taluk-Radhapuram in District- Tirunelveli of State- Tamil Nadu, Country- India photographs and attendance sheet (F46W. Attendance Sheet of Onsite audit)
/31/	Breakdown Details for the current Monitoring Period. 28-March-2012 to 27-March-2016 (Inclusive of both start and end dates) provided by the PP based on their internal audited records (Please Refer Appendix 2 of MR. PP has submitted the Breakdown Details in an Excel Sheet.
/32/	Employment Records for Plant Personnels for the current Monitoring Period. 28-March-2012 to 27-March-2016 (Inclusive of both start and end dates)
/33/	Tool for the demonstration and assessment of additionality. (Version 05.2). (unfccc.int)

2.3 Interviews

An on-site inspection/30/was performed by the assessment team. However, the representatives of the PP and O&M contractors were interviewed personally by assessment team on **27-October-2022;Thursday** i.e., personnel responsible for monitoring of the project activity, data collection and management, and QA/QC procedure.

The details of the people interviewed are mentioned in the table below.

Location: Taluk- Radhapuram in District- Tirunelveli of State- Tamil Nadu, Country- India.

Table no: 04: Details of Onsite Personnel Interview

S. no	Name	Designation	Topic of Discussion
1	Uma Dhance	Green Tech, O&M	JMR & invoicing procedure, calibration, grievance mechanism, Management practices, data storage, QA/QC
2	Jegan Robert	Green Tech, O&M	Implementation of the project, Baseline emission, Emission reduction calculation, technical description of the project and Monitoring.
3	Dinesh Kumar.J	Green Tech, O&M	O & M Management, Breakdown details and maintenance of generation records

			Data recording, management and archiving procedure
4	N – Tamil Selvan	Site Incharge	Breakdown details and maintenance of generation records Data recording, management and archiving procedure

The above stated information regarding the Interview with site personnel was recorded by VKU's Assessment Team in a form called as VKU.F46W. Attendance Sheet of Onsite audit/30/

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 and archiving procedures. The assessment was based on the feedback received during onsite interview coupled with the documentation.

During Onsite Visit, Assessment team also interviewed the local stakeholders involved in the projects to verify the implementation of process of grievance resolution as claimed and mentioned in the Monitoring report/1/ (refer section 2.2 of MR) by the PP. The assessment team confirmed the sustainable development claims and assessed the socio-economic impact of the project on the local community. They also checked the records and observed that the PP provided opportunities for the locals who have got direct employment from the execution of the project activity 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/29/ with stakeholders as tabulated below:

Table no: 05: Details of Personnel Interview/Focussed Group Discussion with Stakeholders

S.no	Name	Designation	Category	Topic of Discussion
1.	Murugan	Security	Local Stakeholder	- Execution of Project activity and its impact on the economic, social and environmental parameters on the local people of the area & around the situated project activity - The ongoing communication procedure and the address of
2.	Esakkimuthu	Security		
3.	Raj	Security		
4.	Santhanam	Security		
5.	Kumareshan	Office boy		
6.	Peachumuthu	Helper		
7.	Sudalai	Helper		
8.	Ashik	Technician		
9.	Umathanu	Technician		

10.	Binu kumar	Technician		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.
11.	Shanmugam	Technician		

The above stated information regarding the Interview with site personnel/local stakeholders was recorded by VKU's Assessment Team in a form called as VKU.F46W. Attendance Sheet of Onsite audit. There were no negative comments received during the stakeholder consultation interview/focussed group discussion conducted on site and more detail is enlisted in the section 4.2.2 below.

2.4 Site Inspections

Site Location visited:

Location: Taluk- Radhapuram in District- Tirunelveli of State- Tamil Nadu, Country- India. Further the location along with longitude and latitude is mentioned in section 4.1 of this report.

An On-site visit was undertaken by the verification team to the project location identified in the MR/1/at Taluk- Radhapuram in District- Tirunelveli of State- Tamil Nadu, Country- India on **27-October-2022; Thursday**, to carry out the following:

- An assessment of the implementation and operation of the registered project activity as per the registered VCS PD version 05 dated 03-November-2009/3/ and VCS MR/1/;
- A review of information flows for generating, aggregating and reporting the monitoring parameters;
- Interviews & Focussed Group Discussion /29/ with relevant personnel to determine whether the operational and data collection procedures are implemented in accordance with the monitoring plan in the PD/3/;
- A cross check between information provided in the monitoring report and data from other sources such as plant logbooks, 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 PD/3/, the applied methodology including applicable tool(s), and, where 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 objective of this phase of the verification is to resolve any outstanding issues which need to be clarified for VKU's positive conclusion on the project description. To guarantee transparency a verification protocol has been customized for the project. The protocol shows in a transparent manner the requirements, means of verification and the results from verifying the identified criteria. The verification protocol consists of three tables; the different columns in these tables are described below.

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

- Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient;

- Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impair the estimate of emission reductions;
- Issues identified in a FAR during validation to be verified during verification have not been resolved by the project proponents.

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

In summary, **1 CL & 4 CARs** were raised during this verification which were closed successfully and details are given under [Appendix B](#) of this report.

2.5.1 Forward Action Requests

Based on the review of the previous VCS Verification Report/10/, no FAR was raised which needs to be closed during this verification and based on the review of the VCS Validation report/9/, no FAR was raised which needs to be closed during the current verification & consecutively No FAR has been raised/identified during current verification.

2.6 Eligibility for Validation Activities

VKU has not undertaken any validation activities as part of the verification and does not hold accreditation for validation of any relevant sectoral scope Hence this section is not applicable.

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

The project is not applied under any other GHG program except VCS. The project is registered under VCS only with registration ID 314⁴. This was confirmed by checking VERRA registry website for the project and, it was found that the project was registered with VCS. Simultaneously other registry websites were also checked such as CDM, GS and GCC but team could not find any such project registered on these registries thus it was confirmed that the project does not claim any emission reduction from other registries. This was supported from the declaration/23/ submitted by PP in which they claimed that same GHG emission reductions of the project from VCS for the current monitoring period will not be claimed under other registries except VCS. Similar exercise of independently searching for such project registration or claim for current monitoring period was performed for other GHG related benefits such as REC and I-REC benefits and based on both

⁴<https://registry.terra.org/app/projectDetail/VCS/314>

independent assessment and declaration submitted by PP/23/, the assessment team accepted the claim that there is no double counting from this project activity for current monitoring period. Thus, ensuring emission reduction generated from the project activity will not be double counted hence accepted by the assessment team. The details of the registries checked are as follows:

- 1) <https://www.recregistryindia.nic.in/>
- 2) <http://cdm.unfccc.int/>
- 3) <http://www.goldstandard.org/>
- 4) <https://verra.org/verra-standards-and-programs/>.
- 5) [I-REC Standard - The International REC Standard Foundation \(irecstandard.org\)](http://www.irecstandard.org/)
- 6) <https://cri.nccf.in/>
- 7) [International Carbon Registry - International Carbon Registry](http://www.internationalcarbonregistry.org/)
- 8) [GCC PROJECTS PORTAL \(globalcarboncouncil.com\)](http://globalcarboncouncil.com/)

Rejection by other GHG programs

The Project is not rejected by other GHG programs. A declaration/23/ for the same is checked and found correct by the assessment team. Also, assessment team independently verified with the following registries and checked projects from the PP matching the same project design and found that no such project either exists or were rejected by the registries.

The details of the registries checked are as follows:

- 1) <https://www.recregistryindia.nic.in/>
- 2) <http://cdm.unfccc.int/>
- 3) <http://www.goldstandard.org/>
- 4) <https://verra.org/verra-standards-and-programs/>.
- 5) [I-REC Standard - The International REC Standard Foundation \(irecstandard.org\)](http://www.irecstandard.org/)
- 6) <https://cri.nccf.in/>
- 7) [International Carbon Registry - International Carbon Registry](http://www.internationalcarbonregistry.org/)
- 8) [GCC PROJECTS PORTAL \(globalcarboncouncil.com\)](http://globalcarboncouncil.com/)

3.2 Methodology Deviations

There is no methodology deviation identified during the current monitoring period. Also, there were no methodology deviations identified during the previous VCS verification/10/ and VCS validation/9/.

3.3 Project Description Deviations

1. The following deviation was reported during the monitoring period of 28-March-2006 to 27-March-2012 (inclusive of both start and end dates), and will be considered in subsequent verifications:

Deviation 1: This issue pertains to verifying the Monthly Generation Report (MGR) of the project with the actual energy exported to the grid. According to the monitoring plan during registration, the exported energy was supposed to be cross-checked with the invoice. However, during the first verification period from **28-March-2006 to 27-March-2012 (inclusive of both start and end dates)** it was found that all the energy generated by the wind turbines in the project was used for internal purposes, and no energy was sold to the state electricity board (TNEB) or third parties. To verify the Joint Implementation Report (JMR) during the first monitoring period, the project proponent provided a Monthly Generation Report /22/for cross-checking purposes.

VKU verified the monthly generation reports/22/ submitted by PP and cross verified the values with the same. Thus, concludes that this deviation is considered permanent and does not affect the project's eligibility, baseline scenario, or additionality. This deviation was acknowledged during the first verification period **28-March-2006 to 27-March-2012 (inclusive of both start and end dates)** and applies to the current (second) verification period from 28-March-2012 to 27-March-2016, (inclusive of both start and end dates) Hence found to be acceptable to VKU.

Deviation 2: This deviation concerns the apportioning procedure of the project. During the registration process, the monitoring plan of the registered VCS PD/3/ did not include the apportioning procedure. However, during project verification, it was observed and subsequently included in section 4.3. PP took deviation in previous monitoring period i.e. 28-March-2006 to 27-March-2012 (first and last date included)

Therefore, PP has included the apportioning procedure in the monitoring plan for current monitoring period as well. This deviation is permanent in nature and do not impact the project's applicability, scale, baseline scenario or additionality This deviation was acknowledged during the first verification period **28-March-2006 to 27-March-2012 (inclusive of both start and end dates)** and applies to the current (second) verification period from 28-March-2012 to 27-March-2016, (inclusive of both start and end dates) Hence found to be acceptable to VKU.

VKU verified the procedure of apportioning and the same has been used by PP while calculating the Emission Reductions for the current monitoring period. The process of apportioning is mentioned in [section 4.3](#) of this report. Thus, VKU concludes that PP has used the procedure correctly while calculating the VCU's for current monitoring period and which is also conservative in nature, since it does not have any impact on project's additionality, project's applicability, scale or baseline scenario & hence it is acceptable to VKU.

Please note that No Project Description Deviations has been requested under the current monitoring period.

3.4 Grouped Project

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

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

During the onsite audit with PP representative, it was concluded that the project is implemented as per the requirement of the registered VCS PD /3/ and approved monitoring plan. The project activity is a bundled wind energy project with total capacity of 15 MW, comprising of 12 Wind energy generators (WEGs) of same capacity, commissioned in the period **from earliest date of commissioning: 31-March-2003 to Last Date of commissioning: 31-March-2006/24/**. The project activity receives wind in two directions, i.e., Southern and North Eastern. Southern direction wind is the main source of power generation and it usually occurs from May to October of every year. The North Eastern wind at the project activity occurs from November to January of every year. The power generated from the wind energy generators (WEGs) was transmitted to the high-tension industry premises of the company /its subsidiary company by using the transmission lines of Tamil Nadu state Electricity Board. During the current monitoring period, it was observed through breakdown log sheet records present on project site that there is major breakdown due to low wind, maintenance of WEGs, which impacted the operation of the project activity. The breakdown details of the project activity have been mentioned in Appendix II of the current Monitoring Report/1/.

Table No 06: The total breakdown hours during the current monitoring period

Plant Site	Breakdown hours
Taluk: Radhapuram District: Tirunelveli State: Tamil Nadu Country: India	44.8 Hours

The breakdown due to scheduled maintenance is as per the manufactures specification which is acceptable to the assessment team as verified during the interview with PP personnel/29/ Senior engineers/Assistant manager present at site during onsite visit. Moreover, there is no unforeseen incident which can affect the applicability of the methodology /8/and thus the same is acceptable to the assessment team.

During the current monitoring period, the Wind Turbine Generators were operational for the entire monitoring period except some scheduled breakdown of 44.8 hours. There have been no substantial repercussions of plant breakdown on the project activity's reduction of GHG emissions or the project activity's monitoring method. Reasons for breakdown include: Substation Maintenance, WTG Preventive Maintenance, Nacelle temp, Pitch angle diff. UPS

Tripped & Natural Calamities. Since then, the plant supplied 77,044.90 MWh of electricity, and thus contributing to **71,419 tCO₂e** GHG reductions.

The emission reduction for this monitoring period pro data comparing with registered VCS PD/3/ is 101,289 tCO₂e, whereas actual emission reductions achieved are 71,419 tCO₂e, which is 29.49% less than the estimated emission reductions for the current verification period. Further explanation is provided section 4.5 of this report The ERs achieved in this monitoring period is basically due to low wind, maintenance of WEGs, major breakdowns during this monitoring period. In the current monitoring period wind speed was very low and also falls under lean period.

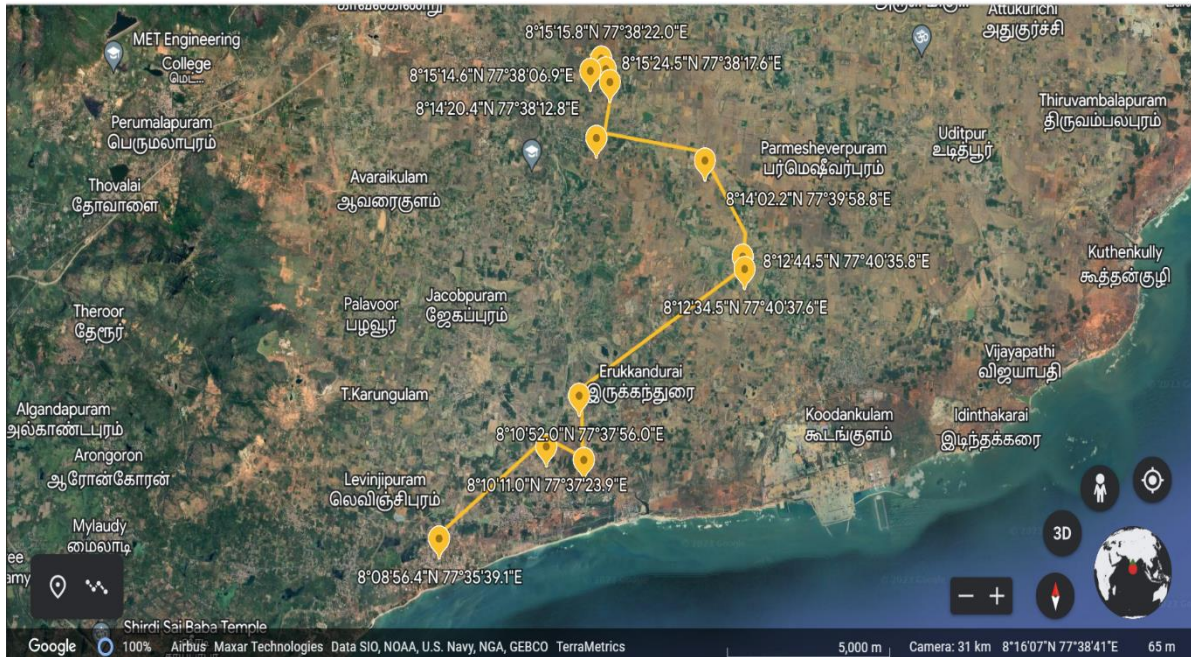


Figure 01: Location of the project as verified through Google Earth /28/

The project location was verified by the assessment team through Google earth(<https://earth.google.com/earth/d/1ON7B0cv4ruCxVvbPgRWIAYsu010-5tg?usp=sharing>) /28/ during desk review and GPS map camera software during onsite visit /27/. Moreover, assessment team confirm that the latitude and longitude as mentioned in the registered VCS PD /3/, VCS Validation Report/9/, VCS MR/1/.

Table no 07: The WTG wise latitudes and longitudes are confirmed below:

Make of all WTGs – Suzlon

S. No.	Company	Capacity	WTG – High Tension Service Connection No	WTG Location Number	Survey Number	Taluk	Latitude	Longitude
1.	Sangeeth Textiles Ltd	1.25	1783	S505	530/1&2	Radhapuram	8°08'56.4N	77°35'39.1 E
		1.25	550	S22	96/3(P)	Radhapuram	8°12'44.5N	77°40'35.8 E
		1.25	830	S91	966/2(P)	Radhapuram	8°14'20.4N	77°38'12.8 E
2.	SriMookambigaSpinningMill spvtLtd	1.25	1749	S711	115/1C2, 1P	Radhapuram	8°10'00.1N	77°38'00.6 E
		1.25	675	S72	341/2(P)	Radhapuram	8°15'05.6N	77°38'28.5 E
		1.25	676	S78	259/2(P)	Radhapuram	8°15'24.5N	77°38'17.6 E
3.	CAV Cotton Mills Ltd	1.25	656	S74	395/2(P)	Radhapuram	8°15'14.6N	77°38'06.9 E
		1.25	655	S75	349/2(P)	Radhapuram	8°15'15.8N	77°38'22 E
		1.25	1659	S362	1479/2	Radhapuram	8°10'52.0N	77°37'56.0 E
4.	SriVasudevaTextiles	1.25	1660	S710	135/1,2, 3,4A(P),4 B(P),4C(P),4D(P)	Radhapuram	8°10'11.0N	77°37'23.9 E
		1.25	548	S23	99(P)	Radhapuram	8°12'34.5N	77°40'37.6 E
		1.25	745	S147	594/1A1 B(P)	Radhapuram	8°14'02.2N	77°39'58.8 E

Starting date of the operation of the project activity is commissioned on 31-March-2003 which is the date of commissioning/commercial operation of the 1st WTG. Assessment team checked the commissioning certificate/24/ and confirmed that the Dates of Commission for all the WTGs are correct. The dates of commissioning were also verified at site Assessment team also confirm during the onsite audit/30/ that there is no change in project design with reference to previous verification/10/and VCS standard version 4.3 /5/ in section 3.3 of the report. The project is implemented as per the description provided in the registered VCS PD/3/.

Table No 08: Commissioning dates of WTGs are given below:

Name of the project participant	Survey No.	WEG HTSC No.	Location (Village)	Commissioning Date
Sangeeth Textiles Ltd	530/1&2	1783	Levenjipuram	31-March-2006
	96/3&4	550	Irrukkandurai	31-March-2003
	966/2	830	Dhanukkarkulam	31-March-2004
Sri Mookambiga Spinning Mills Ltd.	115/1C2,1B	1749	Chettikulam	30-March-2006
	259/2	675	Dhanukkarkulam	04-March-2004
	341/2	676	Dhanukkarkulam	04-March-2004
CAV cotton Mills	395/2	656	Dhanukkarkulam	24-December-2003
	349/2	655	Dhanukkarkulam	24-December-2003
	1479/2	1659	Irrukkandurai	24-March-2006
Sri Vasudeva Textiles Ltd	135/1,2,3,4A,4 B,4C, 4D	1660	Chettikulam	24-March-2006
	99(Part)	548	Irrukkandurai	31-March-2003
	594/1A& 1B	745	Dhanukkarkulam	29-March-2004

The power rating of the WTGs has been verified with the name plates as well as with the technical specifications submitted to VVB by PP of WTGs and also cross checked from the technical manual of the Manufactures/25/. The same could be verified from the VCS Validation Report/9/ Assessment team confirms that the technical parameters are consistent with the registered VCS PD/ 3/. The major technical specifications of the WTG are as follows:

Table no 09: Technical specifications of generator:

Sl.No	Particulars	Specifications
		SuzlonS64 (1250kW)WEG
Rotor		
1.	Diameter	64m
2.	No. of Rotor Blade	3
3.	Orientation	Upwind/Horizontal axis
4.	Rotational Speed	13.9/20.8 rpm
5.	Rotational direction	Clockwise
6.	Rotor Blade Material	GRP
7.	Swept Area	3218 m²
8.	Hub Height	65 m
9.	Regulation	Pitch Regulated
Operational Data		
10.	Cutin Wind Speed	3m/s
11.	Rated Wind Speed	13m/s
12.	Cut off Wind Speed	25m/s
Gear Box		
13.	Type	Integrated3stage1planetaryand2helical
14.	Gear Ratio	1:74.917
15.	Manufacturer	Flender-Winergy
16.	Nominal Load	1390kW
17.	Type of Cooling	Oil cooling system, Forced Lubrication
Generator		
18.	Type	Asynchronous4/6pole
19.	Make	Siemens
20.	Rotational Speed	1010/1515RPM
21.	Rated Output	250/1250kW
22.	Rated Voltage	690V
23.	Frequency	50Hz
24.	Insulation	Class “H”
25.	Enclosure Class	IP56
26.	Cooling System	Air Cooled
Operating Brakes		
26.	Aerodynamic Brake	3Independentsystemswithbladepitching
27.	Mechanical Brake	Spring powered disk brakes, hydraulically released, fail safe
Yaw Drive		
28.	Method of Operation	4ActiveElectricalyawmotors
29.	Bearing Type	Polyamides bearing

The assessment team confirmed through onsite visit 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 AMS I.D., Version 14.0 /8/. The organizational role and responsibility as mentioned in the registered VCS PD/3/ is followed onsite.

The meter's calibration, originally scheduled for March 28, 2012, was delayed and not completed until April 25, 2016. Despite this delay, the results of the calibration showed that the meter is working correctly. Additionally, the PP has applied a 0.5% error factor, which falls within the accuracy guidelines provided in Paragraph 3.4.2 of the VCS Validation and Verification manual

version 3.2⁵, Paragraph 350 of Section 10.2.6 of the CDM Validation and Verification Standard Version 3.0⁶, and Annex 60 Guidelines for Assessing Compliance with the Calibration Frequency, Version 01⁷. All the emergency preparedness as mentioned in the registered VCS PD/3/ is followed onsite as discussed with PP during the onsite visit and no discrepancies were found regarding the same although the required action for delay in calibration has been taken by applying the error factor of 0.5% appropriately.

Assessment team concludes the following:

- a) There are no material discrepancies between project implementation and the project description provided in the registered VCS PD /3/.
- 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 project description and the applied methodology /8/.
- d) 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/16/.
- e) The project has not received or sought any other form of environmental credit/23/, or has become eligible to do so since previous validation/9/ and verification /10/.
- f) The project is registered under VCS only; however, PP has submitted the declaration/23/ stating, they will not claim same GHG emission reductions of the project from CDM for the current monitoring period when project is seeking to get GHG emission reduction from VCS. Audit team also checked the REC Mechanism database of India and I-REC mechanism database found that the project activity is not accredited / registered under REC or IREC mechanism which was verified from the (Renewable Energy Certificate Registry of India/13/REC)/(International-Renewable Energy Certificate Standard Standard) I-REC website and same was verified by checking in other GHG programs including GS Registry, CDM, GCC, UCR& CR-I, however PP has submitted the declaration/23/ for the same.
- g) The project activity complies with four indicators for **sustainable development** in the interim approval guidelines for Clean Development Mechanism (CDM) projects from India as discussed under **section 1.11 of MR /1/**. Assessment team has verified the same during on site visit /30/ and found all the indicators to be effective and applicable for the project activity.

The Project activity has implemented activities that results in 2 SDG Contributions; 7.2, and 13.0.

⁵VCS Validation Verification Manual v3.2.pdf (verra.org)

⁶EB111_repan04_VVS-PoA_(v03.0) (unfccc.int)

⁷https://cdm.unfccc.int/EB/052/eb52_repan60.pdf

1. **7.2 i.e., (Renewable energy share in the total final energy consumption)** As a part of this project activity lifetime, 77,044.90 MWh renewable electricity has been supplied to Indian grid that helps to strengthen the renewable energy share in the energy mix. VVB has referred previous verification reports and thus found the above claimed renewable electricity supplied to Indian grid correct which have also been verified during previous verifications.
2. **13.0 i.e., (Tonnes of greenhouse gas emissions avoided or removed)** Due to installation of this project activity PP has prevented the release of 71,419 tCO₂ into the atmosphere by supplying 77,044.90 MWh clean electricity to the grid. Thus, proving that the project generates eco-friendly, GHG free power which contributes to sustainable development of the region.

Table No 10: Summarized SDG Contributions; 7.2, and 13.0.

Sl.No.	Energy Supplied by the project activity to grid during its lifetime (MWh)	GHG emissions avoided by the project activity during its lifetime (tCO ₂ e)	Monitoring Period dates ⁸
1.	161,463.09 MWh	149,672 tCO ₂ e	First Crediting Period From 28-March-2006 to 27-March-2012 (Inclusive of both dates)
2.	77,044.90 MWh	71,419 tCO ₂ e	First Crediting Period From 28-March-2012 to 27-March-2016 (Inclusive of both dates) (Current Monitoring period)
Total	2,38,507.99 MWh	2,21,091 tCO₂	Contributions Over Project Lifetime

⁸<https://registry.verra.org/app/projectDetail/VCS/314>

In view of the information's as verified above the assessment team is able to conclude that the project has been implemented as described in the registered VCS PD/3/ and MR /1/.

All the above stated information was verified by VKU Certification assessment team during onsite visit at the project implemented site and also by interviewing the site personnel and by conducting focussed group discussion with them /29/.

4.2 Safeguards

4.2.1 No Net Harm

In accordance with the Ministry of Environment, Forest and Climate Change (MoEF&CC) Notification dated 14th September 2006 (S.O. 1533(E), the present project is exempt from undergoing Environmental Impact Assessment (EIA) submission. As the project is a wind-based activity, it is not required to obtain clearance from the Pollution Control Board. However, prior to the installation of wind turbine generators, the project proponent obtained a No Objection Certificate (NOC) from the Department of Non-Conventional Energy Sources of the Tamil Nadu State Electricity Board, and copies of the NOC will be furnished as per request.

During the monitoring period, no adverse impacts on air, water, soil quality, ambience, or socio-economic factors were detected. Moreover, no potential negative environmental or socio-economic impacts were anticipated, and no mitigation measures are deemed necessary. Utilizing wind energy as a renewable resource contributes to the preservation of natural resources, promoting environmental well-being without any negative impacts on the surrounding environment.

Additionally, PP highlighted in MR/1/ that there was no influence on the area's air, water, or ecology during the project's operational and maintenance phases. The project activity helps to strengthen the region's labour force, as PP also emphasised in MR /1/. The project created job opportunities both during construction and for the duration of operation. This was confirmed during an on-site interview /29/ and has improved socio-economic impacts in the project region. The project activity increases the employment rate and standard of living for local residents nearby. As a result, the project activity has not caused any net harm. PP has also submitted the Employment Records for Plant Personnels/32/ which was verified by the VKU Assessment Team during onsite visit and interview with the site personnels/29/. The local stakeholders interviewed in 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 well-being.

4.2.2 Local Stakeholder Consultation

The project in question has already been registered with the Verified Carbon Standard (VCS) under the registration number VCS 314, and the Local Stakeholder Consultation Process described in section 2.2 of MR/1/ has been implemented in accordance with VCS requirements.

Throughout the ongoing feedback process, no significant objections or comments were raised by stakeholders, who expressed overwhelming support for the establishment of similar projects in the area. A stakeholder meeting was held on 13th July 2009 in Vadakkankulam village near Sankaneri, to which stakeholders were invited personally.

Prior to the commencement of the project, the project proponent conducted a comprehensive stakeholder consultation process that included identifying stakeholders, consulting with them over multiple phases through various media such as focus group discussions, detailed social mapping, and fieldwork. The project proponent engaged local stakeholders from all segments of the community, including local NGOs, clubs, facility developers and operators, the elected representatives of the local area (village Panchayat), and local residents. The project proponent employed a variety of strategies to involve them in the project, and to address their concerns, objections, and ideas. This procedure continues throughout the year.

As per the MR/1/ and onsite interview with site personnels/29/ during the meeting, it was evident that the local stakeholders believed& thus confirmed that the wind power project in the region had contributed to an increase in employment opportunities, as well as a subsequent increase in land value and infrastructure improvements, such as roads. Furthermore, the project has stabilized the local grid.

The local stakeholders recognized the project's contribution to the environment, social, and economic well-being of the region, and appreciated the Project Proponent's efforts for the environment's welfare. They also expressed their gratitude to the Project Proponent for generating employment in the region.

To facilitate ongoing engagement, the Project Proponent has established an onsite grievance register/26/where stakeholders can lodge complaints. Effective complaints will be dealt with immediately. However, as this is a renewable wind energy project, no complaints have been received during the monitoring period, which was verified by the VKU assessment team during onsite visit as called as the “complaint register” at the site.

The VKU verification team has interacted with local stakeholders during on-site assessment, and no negative comments or feedback were recorded by the verification team, as summarized in section 2.3 of MR/1/

4.3 AFOLU-Specific Safeguards

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

4.4 Accuracy of GHG Emission Reduction and Removal Calculations

The project monitoring has been carried in accordance with the registered VCS PD/3/ and the monitoring report/1/. It involves a single parameters to be monitored $E_{EXP,i,y}$ (Net Power Exported to grid by the WEGs under the project activity in the year y) according to the monitoring plan and monitoring report/1/. The parameter $E_{EXP,i,y}$ value is sourced from Power Export Bills/JMRs /21/. Energy meters of 0.5s accuracy class installed at site regularly monitor the import and export value which is monthly aggregated in JMRs. ER sheet prepared by PP has been reviewed by assessment team thoroughly by cross checking the values of JMRs with Monthly generation Reports /22/ submitted by PP and found correct including all the formulae and conversions and aggregations.

The monitoring plan laid in the registered PD is being followed at the site /30/. The assessment team has verified the information flow (from data generation, aggregation, to recording, calculation and reporting for these parameters including the values) in the MR/1/. The emission reductions are purely based on the net electricity generated and exported from the machines. PP has provided all the sufficient data for current monitoring period. The values of the parameter net electricity generation supplied to the grid by each phase used in deriving the GHG emission reduction could be very well correlated between the data sets and ER spreadsheet/2/ provided by PP. The verification of each monitoring parameter has been discussed later in section 4.5.

The calculation method and formulae used in calculating baseline emission is in compliance with the methodology used i.e., AMS I.D “Grid Connected Renewable Electricity Generation” version 14/8/. 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, thus leakage emission and project emission has been considered as zero.

The meter's calibration, originally scheduled for March 28, 2012, was delayed and not completed until April 25, 2016. Despite this delay, the results of the calibration showed that the meter is working within the permissible limit.

Throughout the current monitoring period, the delay in meter calibration has been within the acceptable limit. The meters used in monitoring the electricity supply have the same accuracy class of 0.5s, as required by the registered VCS PD /3/. As a result, PP has applied a maximum permissible error factor of 0.5% in the export and import values of electricity generation for the entire delayed month. PP has also submitted the latest calibration certificate to confirm this. Therefore, the VVB team finds this acceptable. Additionally, the PP has applied a 0.5% error factor, which falls within the accuracy guidelines provided in Paragraph 3.4.2 of the VCS Validation and Verification manual version 3.2, Paragraph 350 of Section 10.2.6 of the CDM Validation and Verification Standard Version 3.0, and Annex 60 Guidelines for Assessing Compliance with the Calibration Frequency, Version 01.

GHG Calculations:

The calculation of emission reduction has been done in accordance to the applied methodology used i.e., AMS I.D.: Version 14.0/8/. 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:

Baseline emissions are calculated as follows:

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

Where,

BE_y = Baseline Emissions (tCO₂/year)

$EG_{EXP,i,y}$ = Net Power Exported to grid by the WEGs under the project activity in the year y (MWh/year)

$EF_{grid,CM,y}$ = Baseline Emission Factor (Combined margin CO₂ emission factor for grid)

Therefore, the baseline emissions for Year 2021 (from 28-March-2012 till 31-December-2012)

$$= 22101.64 \text{ MWh} * 0.927 \text{ tCO}_2/\text{MWh}$$

$$= 20488.00 \text{ tCO}_{2e} \text{ (Round down Value)}$$

Therefore, the baseline emissions for Year 2021 (from 01-January- 2013 till 31-December- 2013)

$$= 22897.19 \text{ MWh} * 0.927 \text{ tCO}_2/\text{MWh}$$

$$= 21225.00 \text{ tCO}_{2e} \text{ (Round down Value)}$$

Therefore, the baseline emissions for Year 2021 (from 01-January- 2014 till 31-December-2014)

$$= 19292.51 \text{ MWh} * 0.927 \text{ tCO}_2/\text{MWh}$$

$$= 17884.00 \text{ tCO}_{2e} \text{ (Round down Value)}$$

Therefore, the baseline emissions for Year 2021 (from 01-January- 2015 till 31-December-2015)

$$= 9749.10 \text{ MWh} * 0.927 \text{ tCO}_2/\text{MWh}$$

$$= 9037.00 \text{ tCO}_{2e} \text{ (Round down Value)}$$

Therefore, the baseline emissions for Year 2021 (from 01-January- 2016 till 27-March-2016)

$$= 3004.45\text{MWh} * 0.927 \text{ tCO}_2/\text{MWh}$$

$$= 2785.00\text{tCO}_2\text{e (Round down Value)}$$

$$\text{The Total baseline Emissions} = 20488 + 21,225 + 17,884 + 9,037 + 2,785 = 71,419 \text{ tCO}_2\text{e}$$

The assessment team has verified the information flow (from data generation, aggregation, to recording, calculation and reporting for these parameters including the values) in the MR/1/. The emission reductions are based on the net electricity exported to the grid $E_{\text{EXP},i,y}$. PP has provided all the sufficient data for current monitoring period. The value of the parameter net electricity generation supplied to the grid by the project activity in deriving the GHG emission reduction could be very well correlated between the data sets and ER spreadsheet/2/ provided by PP. The procedure stated here is based on the registered PD/3/ ie., An integrated electronic meter equips each WEG, and a portable master meter connects it to the Central Monitoring Station (CMS) through a wireless Radio Frequency (RF) network (PLC). The CMS can monitor the generation data of each machine in real-time. Both parties, a representative of the project proponent and personnel from the state power utility, TNEB, perform energy measurement on the 15th day of every month. They sign the recorded reading. All the readings are based on the plant readings which is the basis for invoices that will be raised to the SEB every month ie, 15th. No apportioning is involved in the project activity due to the procedures stated earlier. The verification of each monitoring parameter has been discussed later in section 4.5.

The estimated emission reduction from the project activity for current monitoring period are 101,289 tCO₂e, whereas actual emission reductions achieved are 71,419 tCO₂e for the current monitoring period, which is 29.49% lower than the estimated emission reductions. In section 4.5 of this report and section 5.4 of MR/1/ calculations has been stated. Which is further compiled in ER/2/ which has been verified by the assessment team from Monthly Power Bills⁹ issued to PP by TNEB (Tamil Nadu Electricity Board) /21/& crosscheck energy exported to the grid with Monthly generation report (MGR) /22/ of the project, these are generated through SCADA system installed at the project site, to verify the authenticity of the data submitted to VVB by PP.

For calculation of Emission Reductions PP has used the procedure of apportioning in Month of December for particular years for respective PPs. The procedure of apportioning is defined in MR/1/ in section 4.3 of MR/1/ for which the PP has duly taken a Deviation 02 as mentioned in section 3.2.2 of MR/1/ and [Section 3.3](#) of this report

Hence VVB can state that the calculation method and formulae used in calculating baseline emission is in compliance with the methodology used i.e., AMS I.D “Grid Connected Renewable Electricity Generation” version 14/8/. 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 leakage emission and project emission have been considered as zero.

⁹Energy generated from WTG involved in project activity utilized by project owner for captive use so there was no energy sale invoice generated. Hence, PP has taken deviation for crosscheck of energy exported to the grid with Monthly generation report (MGR) of the project.

The verification of each monitoring parameter has been discussed later in section 4.5 This lower generation of emission reduction is due to lower PLF achieved in current monitoring period which is highly driven by wind availability and PP do not have any control on it. In section 4.5 of this report and section 5.4 of MR/1/ calculations has been stated which are appropriately presented in ER spreadsheet/2/ that has been verified by the assessment team from Monthly power Bills issued to PP by State utility/21/

Hence VKU states that the calculation method and formulae used in calculating baseline emission is in compliance to the tool used/16/ and methodology used i.e., AMS I.D. Version 14/8/. Project emissions are considered zero for current monitoring period

4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

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

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

The only parameters in the project activity are “Net electricity supplied to the grid by the project activity $E_{\text{Exp}, i, y}$ (MWh).

Apportioning Procedure

If the verification period dates and billing cycle of the wind energy generators (WEGs) in the project activity do not align, each WEG is fitted with an integrated electronic meter or controller that displays the readings. These readings are manually recorded daily in a manual log book. The controller is connected to a Central Monitoring System (CMS), which constantly monitors the energy generation of each WEG. A daily performance report in electronic and printed form is generated, which consolidates the energy generation data for each WEG.

If the individual verification period dates and billing cycle dates for each WEG in the project activity do not match, the following monitoring procedure is followed:

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 WEG as per TNEB Monthly Report on Generation and Consumption
Z*B	Generation of partial days for calculating emission reduction (kwh)

The below table describe how the parameter ‘Net Power Exported to grid by the WEGs under the project activity in the year $yE_{EXP, i, y}$ (MWh)’, 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 11: Parameter ‘Net Power Exported to grid by the WEGs under the project activity in the year $yE_{EXP, i, y}$ (MWh)

Parameter	Net Power Exported to grid by the WEGs under the project activity in the year $yE_{EXP, i, y}$ (MWh)	
Means of verification		
	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	This is a calculated value Frequency of monitoring/Recording is monthly basis. Net power exported to the grid is in kWh. However, for the calculation purpose Net power exported is converted in MWh. The net power exported to the grid by the project activity is calculated from the sum of the monthly data that will be measured by an electronic tri-vector portable master meter at the WEG location, by the personnel from TNEB, electricity imported from the grid and the transmission losses obtained from credit reports provided by TNEB/TANGEDCO as per below equation: $E_{EXP, i, y} = \sum_{m=1} E_{EXP, i, m}$
	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 VCS PD/3/ and monitoring methodology/8/. However there has been delay in calibration of energy meters. The meter's calibration, originally scheduled

		for March 28, 2012, was delayed and not completed until April 25, 2016. Despite this delay, the results of the calibration showed that the meter is working correctly. Additionally, the PP has applied a 0.5% error factor, which falls within the accuracy guidelines provided in Paragraph 3.4.2 of the VCS Validation and Verification manual version 3.2, Paragraph 350 of Section 10.2.6 of the CDM Validation and Verification Standard Version 3.0, and Annex 60 Guidelines for Assessing Compliance with the Calibration Frequency, Version 01.
	Monitoring equipment	No monitoring equipment is used as this parameter is calculated. However, the parameter export and import, are continuously measured, and monthly recorded. $E_{EXP,i,y}$ is calculated from the sum of the monthly data that will be measured by an electronic tri-vector portable master meter at the WEG location, by the personnel from TNEB as follows: $E_{EXP,i,y} = \sum_{m=1}^{12} E_{EXP,i,m}$ where 'm' stands for each month from January (m=1) to December (m=12)

	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 such as import and export to calculate net electricity export value is 0.5s, which is as per the registered VCS PD /3/which is as per the norm defined in the PPA/19/.
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	No. The accuracy of monitoring equipment's is not valid for the entire range. Therefore, an error factor of 0.5 percent has been applied for both the import and export values. The meter's calibration, originally scheduled for March 28, 2012, was delayed and not completed until April 25, 2016. Despite this delay, the results of the calibration showed that the meter is working correctly. Additionally, the PP has applied a 0.5% error factor, which falls within the accuracy guidelines provided in Paragraph 3.4.2 of the VCS Validation and Verification manual version 3.2,
	Calibration frequency /interval:	Meters used for the monitoring of export; import are calibrated on annually basis as per PPA/19/and registered monitoring plan/3/
	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	Yes. The calibration frequency is annual basis as per PPA/19/ and also outlined in the registered VCS PD/3/ is in accordance with the national standards. In the PPA itself the

	with the local/national standards, or as per the manufacturer's specifications?	accepted calibration frequency is annual basis/19/ verified through the calibration certificates /20/ and onsite present field staff, which is in line with VCS Standard calibrations requirements as well as per the registered monitoring plan but the meter's calibration, originally scheduled for March 28, 2012, was delayed and not completed until April 25, 2016. Despite this delay, the results of the calibration showed that the meter is working correctly. Additionally, the PP has applied a 0.5% error factor
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Calibration/20/ of the measuring equipment's is carried out by an state utility TNEB/TANGEDCO (Tamil Nadu Generation and Distribution Corporation).
	Is(are) calibration(s) valid for the whole reporting period?	No, the calibration is not valid for the whole reporting period due to delays in the calibration as per registered monitoring plan. The PP applied an error factor of 0.5% from 28-March-2012 to 27-March-2016 Error factor has been applied in the months where delay in calibration has occurred. Since the procedures are as per guidelines provided in Paragraph 3.4.2 of the VCS Validation and Verification manual version 3.2, & also is in

		line with the registered monitoring plan, thus there is no deviation applied.
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	No. The calibration is not carried out appropriately in the current monitoring period i.e., 28-March-2012 to 27-March-2016. For the period between 28-March-2012 to 25-April-2016 the calibration was delayed and not completed thus error factor of 0.5% is applied by the PP.
	How were the values in the monitoring report verified?	Cumulative value of $E_{EXP, i, y}$ for entire monitoring period is reported in the monitoring report/1/, and monthly values in the ER calculation sheet/2/. The monthly values were verified from the Power export bills issued by state utility and found to be consistent/21/ Value of this parameter for the current monitoring period was verified as 77,044.90 MWh.
	If applicable, has the reported data been cross-checked with other available data?	The monthly reported values of $E_{EXP, i, y}$ were further cross checked with the monthly generation report (MGR) /22/ of the project, these are generated through SCADA system installed at the project site, to verify the authenticity of the data submitted to VVB by PP and found to be consistent.
	Does the data management ensure correct transfer of data and reporting of emission reductions	On site personnels interview /29/with the project stakeholder of the project activity confirms that the necessary QA/QC procedures

	and are necessary QA/QC processes in place?	are in place and the data management system is effective and reliable.
	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	CAR#01, CAR#02, CAR#03 & CAR#04 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 WTGs. Since 100% data was verified, the team can ascertain that the values adopted for emission reduction calculation are free from material errors.	

Table No 12: Parameters fixed ex ante:

Parameter	Unit	Description	Value ¹⁰
EF _{OM,y}	tCO ₂ /MWh	Operating Margin CO ₂ Emission Factor in year y	1.00 tCO ₂ /MWh is consistent with the registered VCS PD/3/.
EF _{BM,y}	tCO ₂ /MWh	Build Margin CO ₂ Emission Factor in year y	0.71 tCO ₂ /MWh is consistent with the registered VCS PD/3/.
EF _{CM,y}	tCO ₂ /MWh	Combined Margin CO ₂ Emission Factor in year y	0.927 tCO ₂ /MWh is consistent with the registered VCS PD/3/.

Calibration of meters /20/

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

Table No 13: Calibration details of meters:

Annual Calibration Frequency is done by TNEB (State Electricity Board) as per Registered PD/3/

HTSC No.	Meter No.	Make	Accuracy Class	Date of Calibration	Validity of Calibration	Delay in Calibration
1783	04804608	ELSTER	0.5s	25-April-2016	24-April-2017	28-March-2012 to 24-April-2016
550	02307242	ELSTER	0.5s	25-April-2016	24-April-2017	28-March-2012 to 24-April-2016

¹⁰https://cea.nic.in/wp-content/uploads/baseline/2020/07/user_guide_ver4.pdf

830	023296 93	ELSTER	0.5s	25-April-2016	24-April- 2017	28-March-2012 to 24-April- 2016
174 9	047265 99	ELSTER	0.5s	24-December- 2011, 25- April-2016	23- December- 2012, 24- April-2017	24-December- 2012 to 24- April-2016
676	023324 56	ELSTER	0.5s	24-December- 2011, 25- April-2016	23- December- 2012, 24- April-2017	24-December- 2012 to 24- April-2016
675	023324 55	ELSTER	0.5s	24-December- 2011, 25- April-2016	23- December- 2012, 24- April-2017	24-December- 2012 to 24- April-2016
656	047266 05	ELSTER	0.5s	24-December- 2011, 25- April-2016	23- December- 2012, 24- April-2017	24-December- 2012 to 24- April-2016
655	023072 48	ELSTER	0.5s	24-December- 2011, 25- April-2016	23- December- 2012, 24- April-2017	24-December- 2012 to 24- April-2016
165 9	023458 93	ELSTER	0.5s	24-December- 2011, 25- April-2016	23- December- 2012, 24- April-2017	24-December- 2012 to 24- April-2016
166 0	047265 93	ELSTER	0.5s	25-April-2016	24-April- 2017	28-March-2012 to 24-April- 2016
548	023072 39	ELSTER	0.5s	25-April-2016	24-April- 2017	28-March-2012 to 24-April- 2016
745	023458 81	ELSTER	0.5s	25-April-2016	24-April- 2017	28-March-2012 to 24-April- 2016

Assessment on delay in calibration:

Since the meters are to be calibrated annually, there is delay in calibration. To incorporate the delay, error factor of 0.5% is applied for 28-March-2012 to 27-March-2016 for HTSC No: 1783//550//830 (All these Meters are covered under PP: Sangeeth Textiles Limited, this can be verified from ER SHEET/2/

For HTSC No: 1660//548//745 (All these Meters are covered under PP: Sri Vasudeva Textiles, this can be verified from ER SHEET/2/), an error factor of 0.5% is applied from 28-March-2012 to 27-March-2016 (verified from the calibration certificates submitted by PP /20/). Since the calibration for all the above stated meters was done on 25-April-2016 and not done amid the requested monitoring period. Hence the application of error factor of 0.5% is found to be correct by VKU and hence acceptable.

For HTSC no: 1749//675//676 (All these Meters are covered under PP: Sri Mookambiga Spinning Mills Pvt Ltd, this can be verified from ER SHEET/2/)

& For HTSC no: 656//655//1659 (All these Meters are covered under PP: CAV Cotton Mills Ltd, this can be verified from ER SHEET/2/), an error factor of 0.5% is applied from 24-December-2012 to 27-March-2016. Since the calibration for all the above stated meters was done on 24-December-2011 & 25-April-2016 (verified from the calibration certificates submitted by PP /20/) and not done amid the requested monitoring period. Hence the application of error factor of 0.5% is found to be correct by VKU and hence acceptable.

The meter's calibration, originally scheduled for March 28, 2012, was delayed and not completed until April 25, 2016. Despite this delay, the results of the calibration showed that the meters were within permissible limit. Additionally, the PP has applied a 0.5% error factor, which falls within the accuracy guidelines provided in Paragraph 3.4.2 of the VCS Validation and Verification manual version 3.2, Paragraph 350 of Section 10.2.6 of the CDM Validation and Verification Standard Version 3.0, and Annex 60 Guidelines for Assessing Compliance with the Calibration Frequency, Version 01.

The assessment team did not use any sampling procedure to monitor the data parameter and instead thoroughly checked all documents to arrive at positive verification conclusions. The monitoring plan is being implemented as intended at the project site, and the monitoring meters have been calibrated according to the registered monitoring plan. Despite a delay in calibration, the maximum error factor has been applied for the entire month of the delayed period. As a result, the assessment team deemed the evidence to be adequate in quantity and quality to determine the greenhouse gas (GHG) reductions and removals.

The verification team has checked all the meters during the onsite visit/30/ and confirmed that the meters were working within the permissible limits. Also, the calibration /20/of meters are completely under purview of state utility i.e., TNEB/TANGEDCO and PP has no control over the same as confirmed through interviews of site personnel.

Hence it can be concluded that the approach followed by the PP is conservative and in line with the guidelines provided under paragraph 3.4.2 of VVS version 3.2./6/

The registered VCS PD/3/ & MR /1/ and site audit observations confirm that the metering equipment are sealed and maintained by the state utility.

The assessment team has verified the JMRs issued by the State utility TANGEDCO (Tamil Nadu Generation and Distribution Corporation) with monthly Power export bills generated through SCADA system installed at the project site, to verify the authenticity of the data submitted to VVB by PP and confirmed that only the data recorded through main meters is used to calculate net electricity supplied to the grid consequently for ER calculations.

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

GHG Calculations

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

As per para 13 of AMS-I.D version 14/8/11, This project activity is grid connected wind power generation. Hence there is no project emission from the project activity.

For Leakage emissions since the project activity does not entail the relocation of energy-generating equipment from one activity to another, nor does it encompass the transfer of existing equipment to a different activity. Consequently, any leakage emissions that may arise are deemed irrelevant and will not be factored into the assessment, thus in line with opted **methodology para 14 of AMS-I.D version 14/8/**

The formula provided for the calculation of baseline emissions is:

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

$$BE_y = \text{Baseline emissions in year } y \text{ (tCO}_2\text{)}$$

¹¹https://cdm.unfccc.int/filestorage/U/Q/8/UQ8WZYCH5IVSPBNF2760MGE10TDX9A/EB48_repan23_AMS_I.D_ver14.pdf?t=eld8cnJ4cW9ifDCB5qGvfH8wv4sLSGuMfiL6

$E_{EXP,i,y}$ = Net Power Exported to grid by the WEGs under the project activity in the year y (MWh)

$EF_{grid,y}$ = 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” (tCO₂/MWh)

Where:

In the present monitoring period,

$$E_{EXP,i,y} = 77,044.90 \text{ MWh}$$

$$EF_{grid,y} = 0.927 \text{ tCO}_2/\text{MWh}$$

$$BE_y = 77,044.90 \text{ MWh} * 0.927 \text{ tCO}_2/\text{MWh}$$

$$BE_y = 71,419 \text{ tCO}_2 \text{ (Round down value)}$$

Emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y - LE_y$$

Where,

ER_y = Emission reductions in year y (tCO₂e)

BE_y = Baseline emissions in year y (tCO₂e)

PE_y = Project emissions in year y (tCO₂e)

LE_y = Leakage emissions in year y (tCO₂e)

The verification team confirms that appropriate methods and formulae for calculating baseline emissions have been followed as per registered PD/3/. The assumptions, emission factors and default values that were applied in the calculations are justified. The verification team confirms that appropriate methods and formulae for calculating baseline emissions have been followed as per registered monitoring plan /3/. The assumptions, emission factors and default values that were applied in the calculations are justified. The actual emission reduction achieved is 29.49% less than the estimated figure to match the monitoring period as per registered PD. This is due to lower electricity generation compared to estimated generation in registered PD/3/(for the

equivalent period) during the monitoring period which is due to natural phenomena and nature dependent and same is beyond the PP's control.

This comparison is submitted in the ER sheet along with a justification confirming that this event of lower power generation was an unforeseen situation and also not under the direct control of PP. Since the net effect of lower PLF is lower emission reduction is less than generation than the estimated emission reduction, the same was accepted as conservative

During the current monitoring period, the project activity was expected to achieve a reduction in emissions of 101,289 tCO₂e, calculated using the unitary method based on the annual emission reduction in the registered VCS PD. However, the actual reduction in emissions achieved was 71,419 tCO₂e, which is 29.49% lower than the estimated amount of 101,289 tCO₂ as estimated in the VCS PD/3/.

This variation in emission reductions can be attributed to the low PLF, The PLF ex-ante in PD/3/ is 25.90% where as the PLF is 14.65% as observed in current monitoring period.

Percentage Change in PLF with respect to estimated and actual PLF achieved is -43.44%. It should be noted that PLF is determined by the availability of wind, which is a natural phenomenon and beyond the control of the project proponent. In addition, the project experienced some major shutdowns during the monitoring period, totalling 44.8 breakdown hours, as detailed in Appendix II of the Monitoring Report/1/.

To justify the same PP has calculated yearly PLF comparison with PLF ex-ante in ER/2/

Table no 14: PLF Comparison for current monitoring period for each year for current monitoring period is tabulated below:

Year	PLF Ex-ante as per PD	PLF observed	Percentage Change in PLF
Year 2012 28-March-2012 to 31- December-2012	25.90%	22.00%	-15.04%
Year 2013 01-January-2013 to 31- December-2013	25.90%	17.43%	-32.72%
Year 2014 01-January-2014 to 31- December-2014	25.90%	14.68%	-43.31%
Year 2015	25.90%	7.42%	-71.35%

01-January-2015 to 31-December-2015			
Year 2016			
01-January-2016 to 27-March-2016	25.90%	9.59%	-62.96%

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

VKU is of the opinion that this method of calculation of emission reductions is accurate and results in conservative estimation of emission reduction and is line with the applicable VCS requirements. Also confirm that assessment team PP has applied correct formulae as per registered PD/3/ and that calculations done in ER sheet was verified from the documents submitted to VKU by PP, which is acceptable and hence found to be correct.

4.6 Non-Permanence Risk Analysis

There is no non-permanence risk rating identified by the project proponent for the project activity hence not applicable.

5 VERIFICATION CONCLUSION

VKU Certification Pvt. Ltd. has performed second verification of fixed crediting period (28-March-2006 to 27-March-2016 including both start and end dates) the emission reductions reported for the project activity “15 MW Bundled grid-connected wind electricity generation project in Radhapuram Taluk of Tirunelveli District in Tamil Nadu, India” in India, VCS Registry Project ID 314, for the period 28-March-2012 to 27-March-2016 (Inclusive of both start and end dates) is 71,419 tCO₂e, with regard to the relevant requirements for VCS activities. The project proponents of the “15 MW Bundled grid-connected wind electricity generation project in Radhapuram Taluk of Tirunelveli District in Tamil Nadu, India” project by Sangeeth Textiles Limited 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 05) dated 03-November-2009/3/.
- 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 4.3/5/ and GHG program applied, on the reported greenhouse gas emission reductions from the project.

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

- The project has been implemented and operated as per the registered VCS-PD/3/;
- The monitoring report and other supporting documents provided are complete and verifiable and in accordance with the applicable VCS Standard version 4.3/5/ requirements;
- The monitoring is in place as per the applied baseline and monitoring methodology;
- The monitoring plan in the registered VCS-PD/3/ is as per the applied baseline and monitoring methodology.

VKU 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. It is VKU's opinion that the GHG emission reduction stated in the monitoring report version 4.0 of 24-February-2023 for the "15 MW Bundled grid-connected wind electricity generation project in Radhapuram Taluk of Tirunelveli District in Tamil Nadu, India" in India for the period 28-March-2012 to 27-March-2016 (Inclusive of both start and end dates) are fairly stated.

The GHG emission reductions are calculated on the basis of approved methodology AMS I.D "Grid Connected Renewable Electricity Generation" (version 14) /8/ and the monitoring plan included in the registered VCS PD/3/ (version 05) dated 03-November-2009.

Hence VKU is able to certify that the emission reduction from the project during the monitoring period 28-March-2012 to 27-March-2016 (Inclusive of both start and end dates) amounts to 71,419 tCO₂e. The following table shows the Net Emission Reduction from 28-March-2012 to 27-March-2016 (Inclusive of both start and end dates) of fixed crediting period.

Verification period: 28-March-2012 to 27-March-2016 (Inclusive of both start and end dates)

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

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
Year 2012 28-March-2012 to 31-December-2012	20,488	0	0	20,488
Year 2013 01-January-2013 to 31-December-2013	21,225	0	0	21,225
Year 2014 01-January-2014 to 31-December-2014	17,884	0	0	17,884
Year 2015 01-January-2015 to 31-December-2015	9,037	0	0	9,037
Year 2016 01-January-2016 to 27-March-2016	2,785	0	0	2,785
Total (28-March-2012 to 27-March-2016)	71,419	0	0	71,419

APPENDIX A: ABBREVIATIONS

Abbreviations	Full texts
BE	Baseline Emissions
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM M&P	Modalities and Procedures CDM
CER(s)	Certified Emission Reduction(s)
CH ₄	Methane
CL	Clarification Request
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	Executive Board
EF	Emission Factor
ER	Emission Reductions
FAR	Forward Action Request
GHG(s)	Greenhouse gas(es)
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
MoV	Means of Verification
MR	Monitoring Report
NGO	Non-governmental Organization
ODA	Official Development Assistance
PDD	Project Design Document
PE	Project Emission
PP(s)	Project Proponent(s)
Ref.	Document Reference
SLDC	State Load Dispatch Centre
SS(s)	Sectoral Scope(s)
TA(s)	Technical Area(s)
TNEB	Tamil Nadu Electricity Board
TANGEDCO	Tamil Nadu Generation and Distribution Corporation
UNFCCC	United Nations Framework Convention on Climate Change
VCU	Verified Carbon Unit
VKU	VKU Certification Ltd.
VVS	Validation and Verification Standard
VVB	Validation and verification body

APPENDIX B: AUDIT FINDINGS

CAR: Corrective Action Request= 04 Nos

CL: Clarification Request = 01 Nos

FAR: Forward Action Request = 00 Nos

Type	Date	01-November-2022		
CL#01	Reference	Section of Ver protocol: 01, 02 & Section 03/DR		
Description of the Non-Conformance				
1. PP to provide the NO Objection certificate received from the Tamil Nadu state electricity board to the VVB in section 2.1 of MR. 2. PP is requested to provide evidences where all the above stated comments were recorded and is also requested to provide the evidence for continuous recording of grievance/comments recorded during the implementation of the project activity in section 2.2 of MR. 3. PP is requested to provide previous monitoring/Verification report to clarify the VVB if any deviation was opted by the PP or any FAR was raised in section 3.2 of MR.				
1 st Response from PP		Date	18-January-2023	
1. NO Objection certificate has been provided to the verification team. 2. Grievance Register has been provided to the verification team. 3. No deviation has been taken by PP in pervious verification.				
1 st Assessment by Audit Team	Status	Open/Closed	Date	07-February-2023
1. Assessment Team confirms that PP has provided the NO Objection certificate received from the Tamil Nadu state electricity board to the VVB in section 2.1 of MR. 2. As per the documents submitted by the PP it is requested to provide authentic and reliable evidences for grievance register. 3. PP is requested to provide previous monitoring/Verification report to VVB as supporting evidence. Hence CL#01 Open				
2 nd Response from PP		Date	14-February-2023	
2. Authentic Grievance Register has been provided to the verification team. 3. Monitoring report of first verification has been provided to the verification team.				
2 nd Assessment by Audit Team	Status	Closed	Date	23-February-2023
2. Assessment Team confirms that PP has submitted a Grievance register with recorded feedback from the stakeholders, VVB confirms that the evidence submitted is acceptable. 3. PP has provided MR for the previous monitoring period. Hence CL#01 Closed				

Type		Date	01-November-2022	
CAR#01		Reference	Section of Ver protocol: 01, 02, 03 & 4/DR	
Description of the Non-Conformance				
1. PP is requested to mention longitude and latitude separately in section 1.7 of MR 2. PP is requested to provide weblink in section 1.10 to cross reference in the report 3. Please provide weblink as reference for the mentioned EIA notification in section 2.1 of MR 4. PP is requested mention in section -03 the information about the operation of the project activity during this monitoring period, including any information on events that may impact the GHG emission reductions or removals and monitoring also provide details of any breakdown during current monitoring period. If there are any breakdown details so PP is requested to mention the same in appendix and also provide Log Book details as evidence proof for the same as per VCS guidance to fill MR 5. PP to provide meter details in the appendix section with dates of calibration and sufficient exemplification for adoption of calibration frequency as per PPA in section 4.2 of MR 6. PP to provide meter details in the appendix section with dates of calibration and sufficient exemplification for adoption of calibration frequency as per PPA in section 4.2 of MR 7. During the interviews with the field personnel on 27/10/2022 as part of site visit, it was informed that the WTGs from M/s CAV cotton mills and M/s Mookambigai Spinning Mills Ltd were sold to different owners and are now not part of this bundle. PP is requested to clarify how the project design as per the validated PD is still valid and relevant, due to this change in reduction of capacity of the project activity. PP is requested to clarify further whether the change in project design is affecting the additionality of the project activity				
1 st Response from PP		Date	18-January-2023	
1. Longitude and latitude have been mentioned separately in section 1.7 of the updated MR. 2. Weblink has been provided in section 1.10 of the updated MR. 3. Weblink has been provided in section 2.1 of the updated MR. 4. Section 3.1 has been updated as per the MR template. 5. Meter details has been provided in Appendix 1 of the updated MR. 6. Meter details has been provided in Appendix 1 of the updated MR. 7. WTGs of M/s CAV cotton mills and M/s Mookambiga Spinning Mills Ltd were not sold in this monitoring period of the project activity. And no changes has been made in reduction of capacity during this monitoring period. So, does not have any impact on the project applicability, baseline scenario and additionality.				
1 st Assessment by Audit Team	Status	Open/Closed	Date	07-February-2023
1. Assessment Team confirms that PP has mentioned the Longitude and latitude separately in section 1.7 of the updated MR. But PP is requested to enter the geocoordinates near to the installed WTG number S-72 [OPEN] 2. Assessment Team confirms that Weblink has been provided in section 1.10 of the updated MR. 3. Assessment Team confirms that Weblink has been provided in section 2.1 of the updated MR. 4. Assessment Team confirms that PP has updated section 3.1 of MR template. 5. Assessment Team confirms that PP has updated the Meter details provided in Appendix 1 of the MR. 6. Assessment Team confirms that WTGs of M/s CAV cotton mills and M/s Mookambiga Spinning Mills Ltd were not sold in this monitoring period of the project activity and this has made no variations in reduction of capacity during this monitoring period. However PP is requested to clarif				

the ownership of the VCUs generated during this monitoring period, since the project owners at the time of validation viz., CAV cotton mills and M/s Mookambiga Spinning Mills Ltd are no longer part of the bundle.					
Hence CAR#01 Open					
2 nd Response from PP			Date	14/02/2023	
1. Section 1.7 has been updated of the revised MR. 6. The monitoring period of this project activity from 28/03/2012 to 27/03/2016 and the ownership of WTG has been changed after this monitoring period. M/s CAV cotton mills and M/s Mookambiga Spinning Mills Ltd are part of the bundle during this monitoring period. And the ownership of the VCUs is under Project Proponent.					
2 nd Assessment by Audit Team		Status	Closed	Date	23-February-2023
1. It is to confirm on the part of VVB that PP has made a very miniscule correction in the Geocoordinates of the WTG number S-72, which has no significant effect on the GHG emissions and additionality of the project. 2. PP has submitted relevant data related to the ownership of WTG has been changed after this monitoring period. M/s CAV cotton mills and M/s Mookambiga Spinning Mills Ltd are part of the bundle during this monitoring period. And the ownership of the VCUs is under Project Proponent.					
Hence CAR#01 closed					

Type	Date	01-November-2022
CAR#02	Reference	Section of Ver protocol: 04 & 05/DR
Description of the Non-Conformance		
1. PP is requested to specify the duration of calibration mentioned in the wheeling agreement between PP and TNEB. 2. As per MR guideline to fill MR version 4.1 PP is requested to mention in section 4.3: - Procedures used for handling any internal auditing performed - Include line diagrams to display the GHG data collection and management system - The emergency procedures opted at site, also to mention the same in the monitoring plan. 3. PP to provide sufficient explanation of the potential causes for the difference in actual versus estimated GHG ERs. PP is requested to provide information that could possibly lead to the substantial difference between the ex-ante and ex-post GHG ER. 4. During the site visit on 27/10/2022 it was informed that check meters are not used for reading even in the case of faulty main meter readings. Please clarify how measurement of energy is maintained during these periods of uncertainty. In light of the above, PP is also requested to explain the procedures for data collection as far as energy generation is concerned during such situations viz., in times of main meter faults. PP may note that the registered monitoring plan does not adequately mention the procedures during such emergency situations.		
1 st Response from PP	Date	18-January-2023

1. Duration of calibration has been mentioned in section 4.2 of the updated MR. 2. Section 4.3 has been updated as per the MR template. 3. Reasons has been explained in section 5.4 of the updated MR. 4. In case Main meter is found to be outside the acceptable limits of accuracy or faulty or not functioning properly, it will be repaired, recalibrated or replaced as soon as possible. In the event that the Main meter is not in service as a result of maintenance, repairs or calibration, the controller meter will be used. In case both are found to be outside the acceptable limits of accuracy or faulty or not functioning properly, both the meters shall be calibrated immediately and the error percentage found in the main meter during its calibration shall be applied to its metered energy data for the entire period since its last calibration to obtain the corrected value of net electricity exported to the grid. And monitoring procedure has been included now in section 4.3 of the updated MR.				
1 st Assessment by Audit Team	Status	Open/Closed	Date	07-February-2023
1. Assessment Team confirms that PP has mentioned the Duration of calibration in section 4.2 of the updated MR but has not submitted the Calibration certificates. 2. Assessment Team confirms that Section 4.3 has been updated by the PP as per the MR template but PP has not incorporated the 2.1. The emergency procedures opted at site, also to mention the same in the monitoring plan. 2.2. Procedures used for handling any internal auditing performed 2.3. QA/QC monitored data; also, the information is repeated in this section. 3. Assessment Team confirms that PP has provided the sufficient explanation of the potential causes for the difference in actual versus estimated GHG ER but Since PP has mentioned that the actual ER was 29.46 % lower than what was anticipated. PP is requested to provide PLF data for 3 years (if available) or at least 1 year prior to this MP in order to clarify the lower emissions recorded in this MP. This data will enable the assessment team to analyze the ER calculations in compliance with sections 3.1 and 5.4 of the VCS MR template v4.1. 4. Assessment Team confirms that PP has explained the emergency procedures DVR but has not included in section 4.3 of MR. Hence CAR#02 Open				
2 nd Response from PP			Date	14-February-2023
1. Calibration Certificate has now been submitted to the verification team. 2. Section 4.3 has now been updated as per the VCS MR template. 3. PLF report has now been provided to the verification team. 4. Emergency Procedures has now been included in section 4.3 of the revised MR.				
2 nd Assessment by Audit Team	Status	Closed	Date	23-February-2023
1. Assessment Team confirms that PP has submitted the Calibration certificates and are also verified and acceptable. 2. It is to confirm that PP has incorporated the emergency procedures/QA/QC and procedures of apportioning in section 4.3 of MR. 3. PP has explained about the reason behind the difference in actual versus estimated GHG ER & PP has mentioned that the actual ER was 29.43 % lower than what was anticipated, to support the claim PP has provided PLF data for 01 year available in order to clarify the lower emissions recorded in this MP. 4. Assessment team confirms that PP has elaborated on the procedure emergency mechanism followed at site.				

Hence CAR#02 closed

Type	Date	01-November-2022
CAR#03	Reference	Section of Ver protocol: 04 & 05/DR
Description of the Non-Conformance		
1. PP is requested to submit Invoices issued by PP to TNEB for the current monitoring period to the VVB for verifying the ER Sheet. 2. PP is requested to update the values in ER Sheet as per the value in JMR. 3. PP is requested to mention the Measured unit of Net power exported to grid by the WEGs 4. PP to mention Version number of the ER sheet along with date of issuance. Please update it accordingly.		
1 st Response from PP	Date	18/01/2023
1. All the energy generated by these WTGs were fully utilized by own captive use and there was no energy sale during the period to state electricity board (TNEB) or other third parties. 2. Values has been updated in revised ER sheet as per the JMR. 3. Unit of Net generation has been mentioned in revised ER sheet. 4. Version number and date has been mentioned in revised ER sheet.		
1 st Assessment by Audit Team	Status	Open/ Closed Date 07-February-2023
1. PP is requested to submit the Power Export Bills of the WTGs For Sri Mookambiga Spinning Mills Ltd, CAV cotton Mills & Sri Vasudeva Textiles Ltd to verify the ER Sheet. [OPEN] 2. Assessment Team confirms that Values has been updated in revised ER sheet as per the JMR by PP. 3. Assessment Team confirms Unit of Net generation has been mentioned in revised ER sheet by PP. 4. PP is requested to incorporate the date of submission and version number of the ER Sheet. [OPEN] 5. PP is requested to submit JMRs/Invoices to VVB for verification in ER Sheet [OPEN] Hence CAR#03 Open		
2 nd Response from PP	Date	14/02/2023
1. All the energy generated by these WTGs were fully utilized by own captive use and there was no energy sale during the period to state electricity board (TNEB) or other third parties. And also taken the deviation in monitoring report of first verification and the same has been mentioned in section 3.2 of the revised MR. 4. Version number and date has been incorporated in revised ER sheet JMRs has been submitted to the verification team.		
2 nd Assessment by Audit Team	Status	Open/ Closed Date 23-February-2023

1. Assessment team confirms that energy generated by the Plant was utilised as captive use and no sale was done to the grid. PP has declared the same in section 3.2 by taking deviation in previous MR dated 28-March-2006 to 27-March-2012 (first and last date included) and also in current MP.
 4. PP has revised the date of submission and Version in the ER Sheet.
 5. VVB confirms that PP has submitted the JMRs for the current Monitoring period to the Verification team.
- Hence CAR#03 closed

Type	Date	07-February-2023
CAR#04	Reference	Section of Ver protocol: 01 Section of Ver protocol: 02 Section of Ver protocol: 04 Section of Ver protocol: 05
Description of the Non-Conformance		
1. In Section 1.5 of MR; PP is requested to submit the commissioning certificates for Sri Mookambiga Spinning Mills Ltd., CAV cotton Mills & Sri Vasudeva Textiles Ltd 2. In Section 1.11 of MR; As per VCS MR template Version 4.1 For this section PP must provide a brief description that includes a summary description of project activities implemented during the monitoring period that result in SD contributions (i.e., technologies/measures implemented, activity location) the (no more than 100 words) 3. In Sustainable Development Table of MR; PP to clarify if the heading says Contributions over Project Lifetime, how the values entered are only for current monitoring period. 3.1.If the PP wish to claim it only for current monitoring period, they must specify the reason. 3.2.Implemented activities to increase or avoid? 4. In Section 2.1 of MR; Project Proponent (PP) to summarize any potential negative environmental and socio-economic impacts (and steps taken to mitigate them) due to the implementation of the project activities which must be in accordance with the VCS Standard v 4.3 section 3.8. 5. In section 4.2 of MR; PP has applied Error Factor of 0.5% due to delay in calibration from 28-March-2012 to 27-March-2016 in ER Sheet why any sort of description is not provided in the MR. PP to specify 5.1.If the Calibration is performed by under the purview of TNEB, 5.2. Is any NABL accredited Laboratory performing the calibration? 6. In section 4.3 of MR; PP is requested to explain if the stated activities are implemented or yet to be implemented. PP to modify statements as per the implementation at the project site. 6.1.PP is requested to explain the relevance of the statement. 6.2. PP is requested to avoid repetition.		

7. In section 4.3 of MR:As per VC Standard Version 4.3; PP has not incorporated: Roles and Responsibility 7.1.0 & M Procedures and responsible entity performing the same at project implemented site. 7.2.Since there was delay in calibration, PP has not incorporated about the same and no detail about data adjustments and uncertainties has been mentioned. 7.3.PP has done the Apportioning on Apr 2012 generation and Apportioning has not done on Apr 2016 month but there is no description of the same in the MR and as per VCS standard version 4.3 PP must specify the methods/procedures employed to calculate the Net generation and the ERs. PP must specify the calculation/process of Apportioning. 8. In section 5.2 of MR:PP to provide reference of the standard/methodology selected to justify why the project emissions are not considered. 9. In section 5.3 of MR:PP to provide reference of the standard/methodology selected to justify why the leakage emissions are not considered. 10. In Appendix A of MR; PP is requested to submit the evidences for meter calibration. 11. In Appendix I of MR; PP must justify the delay in calibration in MR with reference to VCS Standard version 4.3					
1 st Response from PP			Date	14-February-2023	
1. Commissioning Certificate has been submitted to the verification team. 2. Section 1.11 has been updated as per the VCS MR template. 3. Section 1.11 has been updated as per the VCS MR template. 4. Section 2.1 has been updated as per the VCS MR template. 5. Description has been provided in section 4.3 of the revised MR. 6. Section 4.3 has been updated as per the VCS MR template. 7. Section 4.3 has been updated as per the VCS MR template. 8. Section 5.2 has been updated as per the VCS MR template. 9. Section 5.3 has been updated as per the VCS MR template. 10. Calibration Certificate has been submitted to the verification team. 11. Description of delay in calibration has been included in section 4.3 of the revised MR.					
1 st Assessment by Audit Team		Status	Open/Closed	Date	23-February-2023
12. In section 1.5 of MR: Assessment Team confirms that PP has submitted the commissioning certificates, however The WEG HT Sc No of the highlighted WTGs is inconsistent with the commissioning certificates submitted by the PP. 13. In Section 1.11 of MR; PP has provided a brief description that in SD contributions (i.e., technologies/measures implemented, activity location, VVB confirms the same. 13.1. PP to specify the Monitoring period number. 14. In Sustainable Development Table of MR; PP has clarified the Contributions over Project Lifetime, the values entered are w.r.t to the VCS MR template, hence acceptable. 15. In Section 2.1 of MR; Project Proponent (PP) has summarized the potential negative environmental and socioeconomic impacts due to the implementation of the project activities. 16. In section 4.2 of MR; PP has applied Error Factor of 0.5% due to delay in calibration from 28-March-2012 to 27-March-2016. PP is further requested to explain why the error factor is not applied in the month of December, since they have mentioned about the same in the notes below in ER Sheet. 17. In section 4.3 of MR:PP has modified the statements accordingly which are found to be correct by the assessment team.					

- 18. In section 4.3 of MR:**As per VCS standard Version 4.3; PP has incorporated the relevant sections which is in line with the MR template/requirements. But PP is requested to provide energy billing meter for each captive plant where the electricity is supplied to the VVB for verifying the total net electricity generated by WTGs and consumed at captive plants.
- 18.1.** PP has not specified the procedure of energy measurement. PP to elaborate about how and who is responsible for data recording and how energy is being measured even if there is captive use at specific plants.
- 18.2.** PP is requested to provide documents related to wheeling arrangements that is made between the TNEB and the PPs. Further PP is requested to clarify how transmission losses are taken into account and its effect on the ER calculation.
- 19. In section 5.2 & 5.3 of MR:**PP has provided reference of the standard/methodology selected to justify why the leakage emissions are not considered however PP to add weblink for the methodology referred here.
- 20. In Appendix A of MR;** PP has submitted the evidences for meter calibration.
- 21. In Appendix I of MR;** PP has not justified the delay in calibration in MR with reference to VCS Standard version 4.3
- 21.1.** The Meter number for HTSC No 675 and 676 is found to be inconsistent with the calibration certificates provided to VVB by the PP. Please refer them once again and make the relevant changes accordingly.
- 22. In section 1.1 of MR:**PP is requested to submit the agreement to VVB for verification
- 23. In section 1.8 of MR:** PP to add project/version specific Weblink in footnotes and the weblink regarding the PA is not required
- 24. In section 3.2.2. of MR:** PP to specify in which MP was this deviation requested. Please provide/mention the monitoring period and monitoring period number referred here.
- 25. In MR & ER Sheet:** PP to revise the dates and version of the MR and ER for next version of document submission.
- 26. In section 5.4 of MR & Monthly generation section of ER Sheet;** PP has stated that the reductions in ER is due to Low PLF, PP is requested to show PLF calculation in ER to justify the same.

Hence CAR#4 Open

2 nd Response from PP	Date	24-February-2023
WEG HT Sc No has been corrected in section 1.5 of the revised MR. Monitoring period number has been mentioned in section 1.11 of the revised MR. 5. Error factor has been applied in month of Dec-12 of the revised ER sheet. 7. Electricity bills & Wheeling agreements of captive plant has been submitted to VVB. And also, section 4.3 has been updated as per the VCS MR template. 8. Weblink has now been provided in section 5.2 & 5.3 of the revised MR. 10. Description of delay in calibration has been included in section 5.1 of the revised MR. And Meter number for HTSC No 675 and 676 has been corrected in Appendix I of the revised MR. 11. Wheeling agreement has been submitted to VVB. 12. Weblink has been updated in section 1.8 of the revised MR and Weblink of PA has been removed.		

13. Monitoring period and monitoring period number has now been mentioned in section 3.2.2 of the revised MR.

14. Dates and version of the MR and ER has been updated.

15. Observed PLF has been calculated in revised ER sheet. And justification also provided in section 5.4 of the revised MR.

2nd Assessment by Audit Team	Status	Closed	Date	25-February-2023
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1.For section 1.5 of MR: Assessment Team confirms that PP has submitted the commissioning certificates, and the WEG of CAV cotton Mills Ltd. Survey No 395/2 and 349/2 of is now consistent with the commissioning certificates submitted by the PP.

5. For section 4.2 of MR; Assessment Team confirms that, PP has applied Error Factor of 0.5% due to delay in calibration from 28-March-2012 to 27-March-2016 and have also explained reason for the application of error factor in the ER sheet while calculating GHG Emissions along with that PP has applied the Error factor in the month of December, keeping the approach conservative while evaluating GHG emissions.

7. For section 4.3 of MR: Assessment team confirms that PP has submitted the Electricity bills & Wheeling agreements of captive plant to VVB. And also, section 4.3 has been updated as per the VCS MR template

8. For section 5.2 & 5.3 of MR: Assessment Team confirms that, PP has provided reference of the standard/methodology selected to justify why the leakage emissions are not considered & has added weblink for the methodology referred in this section.

10. For Appendix I of MR: Assessment team has provided description of delay in calibration in section 5.1 of the revised MR & Meter number for HTSC No 675 and 676 has been corrected in Appendix I of the revised MR.

11.For section 1.1 of MR: Assessment Team confirms that, PP has submitted the wheeling agreement to VVB for verification

12.For section 1.8 of MR: Assessment Team confirms that, PP has added project/version specific Weblink in footnotes.

13.For section 3.2.2. of MR: Assessment Team confirms that, PP has specified in which MP was this deviation requested, 7 has provided/mentioned the monitoring period and monitoring period number referred here.

14. For MR & ER Sheet: PP has revised the dates and version of the MR and ER.

15. For section 5.4 of MR & Monthly generation section of ER Sheet; Assessment Team confirms that, PP has stated that the reductions in ER is due to Low PLF along with PLF calculation in ER sheet.

Hence CAR#4 closed

Type		Date	DD/MM/YYYY	
FAR		Reference	Section of VAL/VER	
Description of the Non-Conformance				
1stResponse from PP		Date	DD/MM/YYYY	
1stAssessment by Audit	Status	Open/Closed	Date	DD/MM/YYYY
Team				

APPENDIX C: COMPETENCE STATEMENTS

Team Leader



Certification Pvt. Ltd.

VKU.F50W. Competence Statement

COMPETENCE STATEMENT

Name	Sanjay Kumar
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 1.1 - Thermal energy generation and Renewables TA 1.2 - Renewables TA 3.1 - Energy Demand TA 6.1 - Construction TA 13.1 - Solid waste and wastewater TA 13.2 - Manure

Roles

Team Leader	YES
Validator	YES
Verifier	YES
Financial Expert	YES
Technical Reviewer	YES
TA Expert (1.1, 1.2, 3.1, 6.1, 13.1, 13.2)	YES

Reviewed by	Ayushi Garg (Quality Manager)	Date	11/07/2022
Approved by	Vivek Kumar Ahirwar (Technical Manager)	Date	11/07/2022

Validator/Verifier-Trainee



Certification Pvt. Ltd.

VKU.F50W. Competence Statement

COMPETENCE STATEMENT

Name	Niharika Kaushik
Nationality	Indian
Countries of Experience	India
Education Qualification	B.Sc. (Zoology Honours) M.Sc. (Environmental Sciences)
Year of Experience	2.5+ Years
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	NO
TA Expert (X.X)	NO
Financial Expert	NO

Reviewed by	Vandana Gupta (Quality Manager)	Date	02.02.2023
Approved by	Vivek Kumar Ahirwar (Technical Manager)	Date	02.02.2023

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