



SATARA WIND POWER PROJECT IN MAHARASHTRA, INDIA

Document Prepared By



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Summary:

VKU Certification Pvt.Ltd. (hereafter referred as VKU) was commissioned by WeAct Pty Ltd (hereafter referred as WeAct) has verified the greenhouse gas emission reductions reported for the project activity **“Satara Wind Power Project in Maharashtra, India.” (VCS ID 1519¹)** in India. This is the seventh verification of monitoring period is from **01-September-2021 to 30-April-2022 (Inclusive of both start and end dates)** under fixed crediting period from **06-March-2014 to 05-March-2024 (Inclusive of both dates)**.

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

The verification scope of the project is:

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

Verification was conducted using VKU's procedures in line with the requirements specified in the VCS Program Guide version 4.4/6/, VCS Standard Version 4.5/7/, VCS Validation and Verification Manual version 3.2/8/, CDM M&P, the latest version of the CDM Validation and Verification Standard 3.0/9/, and relevant decisions of the COP/MOP and the CDM EB viz., the requirements of Article 12 of the Kyoto Protocol, the CDM Modalities and Procedures as agreed in the Marrakech Accords under decision 3/CMP.1, the annexes to this decision, subsequent decisions and guidance made by COP/MOP & CDM Executive Board and other relevant rules, including the Host Country (India) legislation. Furthermore, standard auditing techniques were applied throughout the verification process.

The verification process included *inter alia* a desk review, on-site assessment and the resolution of

¹ <https://registry.verra.org/app/projectDetail/VCS/1519>

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

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

During this seventh verification, it is to note that as a result, a total of **Seven (07)** findings were identified, comprising **three (03) Corrective Action Request (CARs); four (04) Clarification Requests (CLs) and zero (00) Forward Action Requests (FAR)**. All the raised findings were successfully resolved/closed after necessary corrections/clarifications by the client. The same has been discussed in [Appendix B](#) of this verification report.

The verification team ensured that the reported emission reductions are complete and accurate by verifying 100% of the data with the supporting documents and evidences made available to the assessment team, This was performed during desk review and also during site visit by conducting personnel interviews and focussed group discussions along with verification of data present on-site 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 ACM0002, Version 16.0: Grid-connected electricity generation from renewable sources /10/ and Tool to calculate the emission factor for an electricity system; Version 06.0.0 /19/ and the monitoring plan included in the registered VCS PD (version 03) dated 08-February-2016/3/

Verification Conclusion:

Based on VKU's thorough assessment, it is their professional judgment that the project activity "Satara Wind Power Project in Maharashtra, India." (VCS ID 1519) fully complies with the applicable requirements of VCS standard version 4.5 /7/ and associated guidelines. The project has successfully implemented the designated baseline and monitoring methodology outlined in ACM0002: Grid-connected electricity generation from renewable sources- Version 16.0 /10/.

The monitoring system in place is effective and reliable, ensuring reasonable level of measurement and precision level allowed by the methodology and the VCS standards without any significant discrepancies. As a result, VKU is able to objectively state that the project has achieved an emission reduction of **27,381 tCO₂e** during the seventh verification for monitoring period, which spans from **01-September-2021 to 30-April-2022 (Inclusive of both start and end dates)** of fixed crediting period (06-March-2014 to 05-March-2024; Including both dates). This certification affirms the project's substantial contributions towards mitigating greenhouse gas emissions.

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1 INTRODUCTION

1.1 Objective

WeAct Pty Ltd (hereafter referred as WeAct) commissioned M/s VKU Certification (here after referred as VKU) to carry out seventh verification of the project “Satara Wind Power Project in Maharashtra, India.” (VCS ID 1519) project in India for the period from 01-September-2021 to 30-April-2022 (Inclusive of both start and end dates) under fixed crediting period from 06-March-2014 to 05-March-2024 (Inclusive of both dates).

The agenda of the verification is to have an independent evaluation of a project activity by an accredited validation and verification body against the requirements of the VCS Program Guide Version 4.4 /6/, VCS standard version 4.5 /7/ and GHG program applied, on the basis of the registered VCS PD Version 03 dated 08-February-2016/3/.

This is the seventh verification of **fixed crediting period (06-March-2014 to 05-March-2024)**, (Inclusive of both dates) for a period of eight months i.e., from 01-September-2021 to 30-April-2022 (Inclusive of both start and end dates). The project activity adopts fixed crediting period of 10 years period as mentioned in section 1.6 of VCS PD Version 03 dated 08-February-2016/3/.

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

Periodic Verification No.	Monitoring Period (Inclusive of both dates)	Number of years
1st in VCS	<u>06-March-2014 to 31-December-2015</u>	1 year 9 months 26 days
2nd in VCS	<u>01-January-2016 to 30-September-2017</u>	1 year 9 months
3th in VCS	<u>01-October-2017 to 31-August-2018</u>	11 months
4th in VCS	<u>01-September-2018 to 31-October-2019</u>	1 year 02 months
5th in VCS	<u>01-November-2019 to 31- October-2020</u>	1 year
6th in VCS	<u>01- November-2020 to 31-August-2021</u>	10 months
7th (Current Monitoring Period) in VCS	01-September-2021 to 30-April-2022	8 months
Total		08-year 01 month 26 days

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

- The project activity has been implemented and operated in strict adherence to the registered VCS PD Version 03 dated 08-February-2016 /3/ & MR /1/ and that all physical features (technology employed, technical specifications of the WTGs, project equipment's, metering and monitoring protocols) of the project are in place.
- The monitoring report/1/ and accompanying documentation have been meticulously compiled and are comprehensive in nature.
- The data has been methodically recorded and stored in accordance with the prescribed monitoring methodology outlined in "ACM0002: Grid-connected electricity generation from renewable sources - version 16.0 /10/ and approved monitoring plan.

The verification process aimed to confirm the seamless implementation and full functionality of the monitoring system, ensuring the accurate generation of Verified Carbon Units (VCUs) without any instances of double counting/28/. Additionally, meticulous scrutiny of the monitoring records and emissions reduction calculations has been carried out to guarantee the completeness, consistency, transparency and absence of any material errors or omissions in the reported data. This aims to establish the reliability and integrity of the data.

1.2 Scope and Criteria

The scope of this verification was the independent, objective review and ex-post determination of the monitored reductions in GHG emissions from the "Satara Wind Power Project in Maharashtra, India.". The verification of this project was based on the validated & registered VCS PD Version 03 dated 08-February-2016/3/ & monitoring report/1/ along with supporting documents submitted by the project proponent to the VKU verification team. The documents thus submitted to the VKU Assessment/Verification Team were reviewed against the following guidance & protocols:

- i) VCS Programme Guide (Version 4.4) /6/
- ii) VCS Standard (Version 4.5) /7/
- iii) VCS Program Definitions (Version 4.4) /4/
- iv) VCS Registration & Issuance Process (Version 4.4) /5/
- v) VCS validation and verification manual version 3.2/8/
- vi) CDM Approved methodology ACM0002 Version 16.0 /10/
- vii) Tool to calculate the emission factor for an electricity system (Version 06.0)/19/
- viii) Tool for the demonstration and assessment of additionality, Version 07.0.0/20/
- ix) CDM Validation and Verification Standard version 3.0/9/

The steps involved are as follows:

- To assess the project's compliance with other relevant rules including the host country (India) legislation.

- To confirm that the monitoring system is implemented and fully functional to generate voluntary emission reductions without any double counting
- To verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan.
- To evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement is sufficiently supported by evidence.
- The verification process ensures that the reported emission reductions are comprehensive and accurate in order to obtain certification.

The verification method and criteria encompassed several phases, including

- (i) Desk review of VCS Project Description, registered under (Version 03) dated 08-February-2016/3/ and other supporting documents listed in **Table-04;**
- (ii) Onsite interviews & Focussed Group Discussions Stakeholders & PP representatives involved in project's implementation.
- (iii) VKU's Completeness/Quality Check, and
- (iv) The Final issuance of the verification report.

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

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

1.3 Level of Assurance

All the revisions of the verification report before being submitted to the client were subjected to an independent internal technical review to confirm that all verification activities had been completed according to the pertinent VKU's procedure, with a Reasonable level of assurance, as per section 04 clause 4.1.2, 4.1.10 and clause 4.1.24 of the VCS Standard version 4.5/7/.

The verification report is based on the Monitoring report/1/, registered VCS PD Version 03 dated 08-February-2016/3/ & supporting documents that were made available to the VKU's assessment team (23//24//25//26//27//28//29/30//31//32//33)) and information collected through performing interviews with PP Representatives/Local Stakeholders during on-site visit /37/

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

Table No 02: The Assessment Team comprises of

Role/Qualification of Assessment Team	Last Name	Middle Name	First Name
VCS Team Leader, Technical Expert TA 1.2, (Local Expert – Country: India)	Srivastava	Kumar	Abhishek
Validator/Verifier - Trainee	Kaushik	NA	Niharika

Table No 03: The Technical Reviewer Team comprises of:

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

1.4 Summary Description of the Project

The project activity involves electricity generation by renewable source (Wind energy) and supplying the generated electricity to the state grid system i.e., Maharashtra State Electricity Distribution Company Limited (MSEDCL), which falls under the Northern, Eastern, Western and North-Eastern regional grids (NEWNE) grid of India, now Unified Indian Grid. The spatial extent of the project boundary is the NEWNE (Now Unified Indian Grid) located in Village: Mann in the District Satara of Maharashtra. This is a greenfield project activity i.e., there was no renewable energy-based electricity generation facility at site of this project and equivalent amount of electricity would have been supplied by fossil-fuel dominated grid – which is pre-project scenario as well as baseline scenario for this project activity. The project activity ensures the reduction of greenhouse gas (GHG) emissions that are real, measurable, and verifiable and also plays beneficial role in the mitigation of climate change

The project activity is grid-connected bundled wind energy generation project located in Village: Mann in the District- Satara of State- Maharashtra in Country- India. NSL Wind Power Company (Satara) Pvt. Ltd. are the Project Proponents of the project activity. The total capacity of the project activity when it got commissioned was 30 MW. The 1st machine (WTG) was commissioned on 06-March-2014 and is functioning successfully since then and dates are verified against registered VCS Project Description version 03 dated 08-February-2014/3/ and commissioning certificates/29/.

Start date of this project activity is earliest date of commissioning of the 1st machine (WTG) of project activity i.e., on 06-March-2014 and the project was fully commissioned on date of commissioning of last machine (20th WTG) i.e., 31-March-2014.

This activity involves installation and operations of 20 numbers of Wind turbine generators (WTGs) of rated capacity 1.5 MW. The WTGs are of Vensys V87 type, supplied by ReGen Power Tech Pvt. Ltd. The entire project is in continuous operation since its date of commissioning of the respective machines, as witnessed by the assessment team during onsite visit, & which was verified against the registered VCS PD/03/ previous Verification report /05/ and commissioning certificates/29/ which were submitted by the PP to the assessment team as a response to the feedback raised by the assessment team during verification assessment as per section 3.26 and clause 3.26.3 of the VCS Standard version 4.5/07/ it is an obligation for the project proponent to make available to the validation/verification body the required supporting documents.

Hence VKU in adherence to the section 3.1, clause 3.1.8 of the VCS Standard version 4.5/07/ conforms that the capacity of the project was verified from the commissioning certificates/29/ and later verified during site visit while interviewing the site personnels and hence declare that the project capacity is in line with the defined methodology ACM0002 version 16.0.

As per MR/1/, the electricity generated from the project is supplied to the state grid system which is under the purview of the NEWNE Grid which is confirmed from registered VCS Project Description version 03 dated 08-February-2014/3/ Group credit notes issued by MSEDCL (Maharashtra State Electricity Distribution Co. Ltd.) and Invoices raised by PP to MSEDCL (Maharashtra State Electricity Distribution Co. Ltd.) /27/ and, last verification report/12/ and interview with PP/37/.

This information was verified during on site assessment /36/and found to be in line with the details provided in the registered VCS Project Description version 03 dated 08-February-2014/3/. The net electricity generated by the project activity that was evacuated to the grid during the current monitoring period (7th monitoring period) from 01-September-2021 to 30-April-2022 (inclusive of both the dates) is 28,034 MWh. The total emission reductions achieved in this monitoring period i.e., from of 01-September-2021 to 30-April-2022 (first and last days included) is 27,381 tCO₂e.

2 VERIFICATION PROCESS

The registered VCS project “Satara Wind Power Project in Maharashtra, India.” (VCS ID 1519) is undergoing seventh periodic verification of fixed crediting period under VCS with VKU Certification Pvt Ltd from 01-September-2021 to 30-April-2022, both dates included. The fixed crediting period from 06-March-2014 to 05-March-2024 (both dates included)

The approach adopted to ensure the quality of emission reductions is described in the following sections.

2.1 Method and Criteria

Verification was conducted using VKU’s procedures in line with the requirements specified in the VCS Requirements, i.e., VCS Program Guide Version 4.4 /6/, VCS standard document version 4.5 /7/. The project activity does not fall under category “grouped projects”, hence no sampling methods was employed by the assessment team and during onsite visit /36/ verification team reviewed 100% data for all the Wind Turbine Generators involved in this project at site for the verification of GHG emission reductions or removals generated by the project.

- The GHG emission reductions are based on the approved Baseline and monitoring methodology ACM0002 “Grid-connected electricity generation from renewable sources” Version 16.0 /10/
- Scope: 01 - Energy Industries (renewable /non-renewable sources)
- Project type: Type I - Renewable energy projects

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

- Tool to calculate the emission factor for an electricity system, Version 06.0.0 /19/

Keeping in line with ISO (14064-3; 2019, clause 06 & 14065-2020, clause 09) Standard guidelines assessment team has framed down the process for completing the verification and has followed the same throughout the execution of audit of the said project VCS 1519. The verification consisted of the following phases.

1. **Planning:** The assessment team plans the GHG-programme site visit and starts with a desk review.
2. **Strategic Analysis:** Assessment team performed strategic analysis to understand the activities and complexity of the organization, project or product, and to determine the nature and extent of the verification activities.
3. **Risk Assessment:** Assessment team performed risk assessment of the GHG statement to identify the risk of a material misstatement or nonconformity with the criteria

4. **Evidence Gathering Activities;** Using a risk-based approach assessment team prepared evidence gathering activities, to collect sufficient and appropriate evidence upon which to base the conclusion & determine whether the GHG statement conforms to the criteria, taking into account the principles of the standards or GHG programme that apply to the GHG statement.
5. Need for site visit is identified and site visit is planned.
6. **Audit and Sampling Plan:** An audit plan is prepared, including all sub-elements required for an integrated verification process aligned with the contract, scope, objectives, level of assurance and materiality, the same was documented in VKU.F24W. Audit and Sampling Plan_VKU.VER.03.22_VCS_1519
7. **Evidence Gathering Plan;** The evidence-gathering plan is prepared based on the results of the VKU's Assessment Team's risk assessment. It was designed to lower the verification risk to an acceptable level. · The evidence-gathering plan thus specify the type and extent of evidence-gathering activities
8. **Client Confirmation and Approval:** The site visit audit plan is sent to the client for review and confirmation/approval via email.
9. **Document Review:** Relevant documents, such as the verification report, monitoring plan, methodology, VCS PD and QA/QC procedures are thoroughly reviewed.
10. **On-Site Assessment:** This includes interviews and evaluation of the actual project scenario.
11. **Resolution of Discrepancies:** Any non-conformities identified during the assessment are addressed and resolved.
12. **Independent Review:** A technical reviewer provides an independent assessment.
13. **Final Verification:** After completeness checks, the verification report and certification are issued.

The following sections outline each step in more detail.

2.2 Document Review

During the document review, VKU has applied standard auditing techniques to assess the quality of information provided. The verification was performed primarily based on the review of VCS monitoring report for "Satara Wind Power Project in Maharashtra, India." version 1.0 of 09-May-2022, Version 2.0 of 27-September-2022, 3.0 of 03-March-2023 and final Version 3.1 of 08-September-2023/1/ and the emission reduction calculations spreadsheet version 1.0 of 09-May-2022 and final Version 2.0 of 27-September-2022 /2/ were assessed as part of the verification. In addition, the registered VCS Project Description version 03 dated 08-February-2016/3/in particular the baseline estimations and the monitoring plan for the project was reviewed. The following **table-04** lists the documentation that was reviewed during the verification.

As per section 3.26 and clause 3.26.3 of the VCS Standard version 4.5/7/ it is an obligation for the project proponent to make available to the assessment team the required supporting

documents and data needed to support statements and data as documented in the monitoring report. Thus, the assessment team reviewed the following documents during verification:

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

Current Verification Reference Documents	
/1/	VCS monitoring report for “Satara Wind Power Project in Maharashtra, India.” in India, - Version 1.0 of 15-March-2023 - Version 2.0 of 27-September-2022 - Version 3.0 of 03-March-2023 - Version 3.1 of 08-September-2023
/2/	Emission Reduction Calculation Spreadsheet, - Version 1.0 of 15-March-2023 - Version 2.0 of 27-September-2022
Background Documents/Weblinks	
/3/	<u>Registered VCS PD for the project ‘Satara Wind Power Project in Maharashtra, India.’ version 03 dated 08-February-2016</u>
/4/	<u>VCS program Definitions (Version 4.3) of 21-December-2022</u>
/5/	<u>VCS Registration & Issuance Process (Version 4.3) of 17-January-2023</u>
/6/	<u>VCS: VCS Program Guide, version 4.3 of 17-January-2023</u>
/7/	<u>VCS: VCS Standard, version 4.4 of 17-January-2023</u> <u>VCS Standard, version 4.5 dated 29-August-2023 (Latest)</u>
/8/	<u>Validation and verification manual version 3.2 dated 19-October-2016</u>
/9/	<u>CDM Validation and Verification Standard version 3.0 dated 09-September-2021</u>
/10/	<u>CDM Executive Board: Baseline and Monitoring Methodology “ACM0002: Grid-connected electricity generation from renewable sources- version 16.0</u>
/11/	<u>LGAI Technological Center, S.A (Applus+ Certification): Validation Report: Satara Wind Power Project in Maharashtra, India., Version 01, dated 10-February-2016</u>
/12/	<u>LGAI Technological Center, S.A (Applus+ Certification): Verification Report: Satara Wind Power Project in Maharashtra, India., Version 02, dated 22-November-2021</u>
/13/	<u>VERRA: Project search</u>
/14/	<u>UNFCCC: Project search</u>
/15/	<u>Renewable Energy Certificate Registry of INDIA - Registered RE Generator List (recregistryindia.nic.in)</u>
/16/	<u>I-REC Standard - The International REC Standard Foundation (irecstandard.org)</u>

/17/	<u>Gold Standard Foundation</u>
/18/	<u>EIA NOTIFICATION dated 14-September-2006</u>
/19/	<u>Tool to calculate the emission factor for an electricity system, Version 06.0</u>
/20/	<u>Tool for the demonstration and assessment of additionality, Version 07.0.0</u>
/21/	<u>CO2 Baseline Database for the Indian Power Sector</u>
/22/	Central Electricity Authority (Installation and Operation of Meters) Regulations Notified on 17-March-2006 <u>No. 502/70/CEA/DP&D</u> Amendments Notified on 26-June-2010 <u>No. 502/6/2009/DP&D/D-I</u> https://cea.nic.in/wp-content/uploads/2020/02/meter_reg.pdf <u>Metering Regulations Archives - Central Electricity Authority (cea.nic.in)</u>
Reference/Supporting documents submitted by PP to VVB	
/23/	1. Wind Energy Purchase Agreement between M/s NSL Wind Power Company (Satara) Pvt Ltd and Maharashtra State Electricity Distribution Company Limited on 19th-August-2014 for 12 MW Wind Power Project (08 Nos. X 1500 kW Regen Make) at Village Virali & Chilarwadi, Tal: Mann, District: Satara. 2. Wind Energy Purchase Agreement between M/s NSL Wind Power Company (Satara) Pvt Ltd and Maharashtra State Electricity Distribution Company Limited for 12 MW Wind Power Project (05 Nos. X 1500 kW Regen Make) at Village Virali & Chilarwadi, Tal: Mann, District: Satara 3. Wind Energy Purchase Agreement between M/s NSL Wind Power Company (Satara) Pvt Ltd and Maharashtra State Electricity Distribution Company Limited for 12 MW Wind Power Project (7.5 Nos. X 1500 kW Regen Make) at Village Virali & Chilarwadi, Tal: Mann, District: Satara
/24/	Certificates of Calibration for all the energy meters for the project activity active during current monitoring period (01-September-2021 to 30-April-2022, inclusive of both start and end dates) issued by Maharashtra State Electricity Distribution Company Limited and from 2022 calibration certificates is issued by MAHAVITRAN (A Govt of Maharashtra Undertaking).
/25/	O & M (Service Agreement) between Satara Wind Power Project in Maharashtra, India and ReGen Power Tech Private Limited
/26/	JMRs Issued by Maharashtra State Electricity Distribution Company Limited to PP i.e., NSL Wind Power Company Private Limited
/27/	Invoices issued by PP to DISCOM i.e., Maharashtra State Electricity Distribution Company (MSEDCL)
/28/	Letter of declaration dated from PP regarding not having created or sought any other form of environmental credit for the current verification period (01-September-2021 to 30-April-2022, inclusive of both start and end dates)
/29/	Commissioning Certificates of all 20 Machines (Wind Turbine Generators) of

	the project activity issued by Maharashtra State Electricity Distribution Company Limited.
/30/	Technical Specifications of Wind Turbine Generators (WTGs) of “Satara Wind Power Project in Maharashtra, India.” project as specified by manufacturer ReGen Power Tech Private Limited.
/31/	Grievance Register/Grievance-Resolution Letters present on project implemented site; more information related to the same has been included in Section 4.2.2 of this report
/32/	Tripping/Breakdown Details
/33/	Monthly Generation Reports/PLF Details
VVB Documents used during Current Verification	
/34/	GPS Google earth software used for Location; Google Earth
/35/	GPS Map Camera: Geotag Photos & Add GPS Location
/36/	Onsite visit on 13-July-2022 to Project implemented site i.e. Village: Mann of District- Satara of State- Maharashtra in Country- India. On-site Visit Photographs/Evidences
/37/	Personnel Interviews and Focussed Group Discussions during onsite visit dated 13-July-2022 detailed in section 2.3 of this report
/38/	VKU-Attendance Sheet of Onsite Audit_ VKU.VER.03.22_VCS_1519
/39/	VKU-Risk Assessment_ VKU.VER.03.22_VCS_1519
/40/	VKU-Audit and Sampling Plan_ VKU.VER.03.22_VCS_1519

2.3 Interviews

An on-site inspection/36/ was performed by the assessment team. The representatives of the PP were interviewed personally by assessment team on 13-July-2022; i.e., Tables 05 & 06 provide a comprehensive overview of the onsite interview process/37/ conducted during the verification. These tables outline the personnel involved in the interviews, along with their respective roles. The interviews specifically targeted individuals responsible for monitoring the project activity, data collection and management, as well as those involved in the quality assurance and quality control (QA/QC) procedures. The tables serve to identify the individuals interviewed and provide relevant information regarding their roles within the project. The key personnel interviewed during the opening meeting and closing meeting session of the onsite audit, and the main topics of the interviews are summarized in the table below:

Table no: 05: Details of Personnel Interview

S.no	Name	Designation	Topic of Discussion
1	Abhay Yadav	NSL Power	Implementation of the project,

		Senior Manager	Baseline emission, Emission reduction calculation, technical description of the project and monitoring along with QA/QC
2	Ganesh D. Mohite	Regen Infra Services Area Manager	
3	Sachin Shinde	Regen Infra Services Site Incharge	SCADA, Breakdown details and maintenance of generation records
4	Deep J. Borah	We Act Pty. Ltd	Data recording, management and archiving procedure

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

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

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

S.no	Name	Designation	Category	Topic of Discussion
1	Vijay Kamble	Site Operator	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
2.	Sachin V. More	Senior Technician		The ongoing communication procedure and the address of their grievance mechanism followed by the project proponent
3.	Akshay H. Gaikwad	Site Operator		Scope and generation of employment in the locality due to the implementation of said project activity in the area.
4.	Vikas S. Jadhav	Security Guard		The ongoing trainings provided to
5.	Mohan	Office Boy		

				the locals for self-employment.
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The VKU Assessment Team meticulously documented the information obtained during the interview with site personnel /37/. This data was recorded using VKU's dedicated form, specifically VKU.F46W, known as the Attendance Sheet of Onsite Audit/38/ & there were no negative comments received during the stakeholder consultation interview conducted on site and more detail is enlisted in the [section 4.2.2](#) below.

2.4 Site Visits

Site Location visited:

Location: near Village – Mann in District- Stara of State- Maharashtra, 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 Village – Mann in District- Stara of State- Maharashtra of India on 13-July-2022/36/, to carry out the following;

- An assessment of the implementation and operation of the registered project activity as per the registered VCS PD Version 03 dated 08-February-2016/3/ and VCS MR/1/.
- A review of information flows used to generate, aggregating and reporting the monitoring parameters.
- Interviews/37/ with relevant personnel to determine whether the operational and data collection procedures are implemented in accordance with the monitoring plan in the registered VCS Project Description (PD) version 03 dated 08-February-2016/3/.
- A cross check between information provided in the monitoring report and data from other sources such as plant generation log books, inventories, purchase records or similar data sources.
- A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the VCS PD Version 03 dated 08-February-2016/3/ 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 situations in tables; the different columns in these tables are described below.

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

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

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

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

Keeping in line with the VCS Standard Version 4.5, Clause 4.1.21 Assessment team has documented a summary of total **07 Findings (00 FARs, 04 CLs and 03 CARs)** were raised during this verification which were closed successfully and details are provided under [Appendix B](#) of this report.

2.5.1 Forward Action Requests

Based on the review of the VCS Validation Report/11/ and previous VCS Verification Report /12/, no FAR was raised during Validation and previous Verification which needs to be closed during this verification and **no FAR has been raised during current verification, (01-September-2021 to 30-April-2022; Inclusive of both start and end dates).**

2.6 Eligibility for Validation Activities

VKU has not undertaken any validation activities as part of the verification and does not hold accreditation for validation of any relevant sectoral scope Hence this section is not applicable. It is to further conclude that during current verification there is no validation assessment undertaken either by VKU itself or parallelly by other certification bodies, as the same was confirmed with focussed group discussions and interview with the PP /37/ during site visit/36/

Assessment team assessed the VERRA's website on 08-September-2023: <https://verra.org/validation-verification/vku-certification-pvt-ltd/#vcs> wherein the scope of services of VKU certification Pvt. Ltd. is mentioned as verification and not validation. Thus, ensuring that the accreditation details mentioned in FVR is consistent and correct.

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

The project has not applied under any other GHG program except VCS for current monitoring period, 01-September-2021 to 30-April-2022 (inclusive of both dates). The project is registered under VCS only with project ID 1519². This was confirmed by checking VERRA registry website and similar exercise was performed for CDM/GS/GCC/UCR registries with similar project title/capacity and Project Proponents but the assessment team was not able to trace any such project registered under any of the above stated registries or under any other similar mechanisms. This was supported from the declaration/28/ 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. Similarly, an exercise of independently searching for such project registration or claim for current monitoring period was performed for other GHG related benefits such as REC/15/ and I-REC/16/ benefits and based on both independent assessment and declaration submitted by PP/28/, the assessment team accepted the claim that there is no double counting from this project activity for current monitoring period. The assessment team has also cross-checked the issuance records available on the Verra website and thus confirmed & ensured that the emission reduction generated from the project activity are not & will not be double counted hence accepted by the assessment team. The details of the registries checked are as follows:

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://irecstandard.org/)
- 6) <https://cri.nccf.in/>
- 7) [International Carbon Registry - International Carbon Registry](http://internationalcarbonregistry.com/)
- 8) [GCC PROJECTS PORTAL \(globalcarboncouncil.com\)](http://globalcarboncouncil.com/)

² <https://registry.verra.org/app/projectDetail/VCS/1519>

9) VCU Issuance Records

Rejection by other GHG programs

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

The details of the registries checked are as follows:

- 1) <https://www.recregistryindia.nic.in/>
- 2) <http://cdm.unfccc.int/>
- 3) <http://www.goldstandard.org/>
- 4) <https://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://www.gccprojectsportal.com/)
- 9) VCU Issuance Records

3.2 Methodology Deviations

There is no methodology deviation identified during the current monitoring period from 01-September-2021 to 30-April-2022 (Inclusive of both start and end dates). Also, no methodology deviations identified during the validation & previous verification which were confirmed from the previous the VCS Validation /11/ & previous VCS Verification reports/12/.

3.3 Project Description Deviations

There are no Project description deviations applied during current monitoring period i.e., 01-September-2021 to 30-April-2022 (Inclusive of both the days).

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

Deviation 1: In second Monitoring Period, spanning from 01-January-2016 to 30-September-2017 (inclusive of both days), a deviation was recorded due to a delay in meter calibration. The project proponent (PP) is fully committed to complying with all mandatory regulatory and statutory requirements at both the state and national levels, as explicitly stated in the VCS PD (Project Design). While the original proposal aimed for annual meter calibration, it is important to note that the prevailing practice in the project region does not have a specific interval for calibration. To address this, the PP has made reference to the national practice, as outlined in

the CEA (Central Electricity Authority) order dated 17-March-2006, which mandates that "all meters shall be tested once in five years" (also mentioned in the CEA Gazette released on 23-December-2019) in paragraph 18(b).

Detailed information regarding the energy meter calibration can be found in Section 3.2.2 of the MR (Monitoring Report). It is pertinent to mention that the validity of the previous calibration still falls within the five-year period as required by the national regulation. Importantly, it should be emphasized that this deviation from the original proposal does not have any impact on the existing applicability conditions of the methodology, the concept of additionality, or the appropriateness of the baseline scenario. The project remains fully compliant with the necessary requirements, and the deviation is well-justified in accordance with the applicable national regulations.

Deviation 02: During the third monitoring period from (01-October-2017 to 31-August-2018, (Inclusive of both the days), a deviation was requested for feeder numbers change in the project. The state authority, MSEDCL, has resifting of feeder load for the project at the Hiwarwadi substation due to their internal practices and revisions. However, it is important to note that besides the change in feeder's numbers there have been no other significant changes to the project activity.

Details of load shifting & respective feeder at the Hiwarwadi substation are as follows:

- 1) WTG Nos- NSL-1, NSL-2 and NSL-10, NSL-11, NSL-12, NSL-13, NSL-14, NSL-15, NSL-3, NSL-6, NSL-7 have been shifted from Feeder no. 01 to Feeder no. 02
- 2) WTG Nos- NSL-20, NSL-22, NSL-22, NSL-17, NSL-23, NSL-26, NSL-34, NSL-36 and NSL-37 have been shifted from Feeder no. 04 to Feeder no. 01
- 3) WTG Nos- NSL-28 is shifted from Feeder no. 04 to Feeder no. 05

The change of feeder load or load reshuffling are not under the purview of Project Participant (PP) completely under jurisdiction of the state utility (MSEDCL) which is the sole authorized body for any decision regarding the feeder load connection. PP has submitted the Power Purchase Agreement to the VVB for the verification of the same.

The project has duly reported the changed feeder numbers in the Emission Reduction (ER) sheet, and they have been included in Appendix 03 of the monitoring report. During an onsite visit, the VKU assessment team verified the feeder numbers and also conducted interviews with the site personnel to confirm the number of the WTGs connected to specific feeders. The assessment team also cross-checked the last verification reports and Joint Monitoring Reports (JMRs) issued by MSEDCL, which specify the updated feeder numbers. As a result, the verification team has approved the requested deviation and is satisfied that the project remains fully compliant with the VCS rules.

The verification team has acknowledged and accepted the deviation, affirming that the project remains fully compliant with the VCS rules. Furthermore, it is important to note that this deviation has no impact on the applicability of the methodology, the concept of additionality, or

the appropriateness of the baseline scenario. The project continues to meet all relevant requirements and remains in adherence with VCS guidelines.

The change of feeder load or load reshuffling has been identified as a project deviation in accordance with the guidance outlined in Section 3.6.1 of VCS standard v.3.7. Nevertheless, this deviation does not impact the current applicability conditions of the methodology, additionality, or the appropriateness of the baseline scenario.

The VKU Assessment/Verification Team conducted an assessment of the feeders, confirming that they possess mentioned no. of WTGs in specific feeders. During an onsite visit, they further verified the details of the resifting with site personnel. These findings were corroborated by the previous monitoring report, as well as the PPA and JMRS. The VKU assessment team deems this information to be accurate and acceptable.

3.4 Grouped Project

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

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

Based on the onsite audit conducted with the project proponent (PP) representative, it was determined that the project is implemented as per the requirement outlined in the registered VCS PD /3/ and approved monitoring plan. The project activity is a wind energy project with total capacity of 30 MW, comprising of 20 Wind Turbine Generators (WTGs) of rated capacity 1500 kW each, commissioned in the period from 06-March-2014 to 31- March-2014/29/. Wind is the main source of power generation. The power generated from the wind turbine generators (WTGs) is exported to Unified Indian Grid. During the current monitoring period (01-September-2021 to 30-April-2022; Inclusive of both the days), no unforeseen incidents or events occur that could significantly impact the operation of the project activity were identified, with the exception of scheduled maintenance and service breakdowns. The total duration of these breakdowns was calculated to be 8609.6 hours /32/.

It is important to note that these breakdowns did have considerable impacts on the project activity's reduction of greenhouse gas (GHG) emissions or the monitoring methodology employed. Since the drop in ER from the estimated ER for the MP is 19.55% that is mainly accounted for low PLF during the current monitoring period. There was unexpected downtime due to wind unavailability and also due to routine maintenance etc.

Table no: 07: Breakdown Hours for the current Monitoring Period (01-September-2021 to 30-April-2022

MONITORING PERIOD 01-September-2021 to 30-April-2022	TOTAL HOURS FOR THE MONTH	TOTAL HOURS	PRODUCTION HOURS	PERCENTAGE OF PRODUCTION HOURS	BREAKDOWN HOURS	PERCENTAGE OF BREAKDOWN HOURS	SCHEDULED HOURS (Machine)	UNSCHEDULED HOURS (Grid)
Sep-21	720	14400	13479.4	93.61%	791.3	5.50%	785.7	5.6
Oct-21	744	14880	12167.5	81.77%	1024.5	6.89%	985	39.5
Nov-21	720	14400	12227.3	84.91%	1594.4	11.07%	1481.8	112.6
Dec-21	744	14880	10407.9	69.95%	1561.8	10.50%	1546.5	15.3
Jan-22	744	14880	10873.9	73.08%	1693.4	11.38%	1598	95.4
Feb-22	672	13440	10003	74.43%	1002.1	7.46%	793.5	208.6
Mar-22	744	14880	12674	85.17%	304	2.04%	276.3	27.7
Apr-22	720	14400	12031.5	83.55%	638.1	4.43%	395.6	242.5
TOTAL	5808	116160	93864.5	80.81%	8609.6	7.41%	7862.4	747.2

During the monitoring period, the project activity experienced no unexpected incidents or events that could have had a significant impact on its operation. However, there were some scheduled breakdowns amounting to 7862.4 hours for the purpose of plant maintenance and service. Additionally, there were unscheduled breakdowns lasting 747.2 hours, caused by either internal or external grid failures. The total duration of these breakdowns was found to be 8609.6 hours. This downtime is approx. 7.4% of total available hours of operation of the WTGs, during the current monitoring period.

Breakdown Hours = 8609.6

Total Operational Hours of WTGs = 116160

Breakdown % of Total Operational Hours = $(8609.60/116160) * 100 = 7.41\%$

It's crucial to highlight that these breakdowns had a substantial impact on both the project activity's reduction of greenhouse gas (GHG) emissions and the employed monitoring methodology. The 19.55% drop in ER, as compared to the estimated ER for the Monitoring Period (MP), is primarily attributed to the low Plant Load Factor (PLF) and unexpected downtime, including instances of wind unavailability and routine maintenance.

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

- Generator failure
- External/Internal grid failure

- Machine servicing and repairing
- External/Internal grid maintenance

The loss of generation hours as a percentage of total operating is:

$$(Total\ Breakdown\ Hours/Total\ Operating\ Hours) * 100 = (8609.6/116160) * 100 = 7.41\%$$

Out of 7.41% the 1/10th of the breakdown due to Operation and maintenance & the rest is due to lower PLF, grid availability and others.

The project activity was operational for a total of 5808 hours, representing 242 days. However, during the monitoring period from 01-September-2021 to 30-April-2022, the project experienced breakdowns for a duration of 8609.6 hours, as detailed in Appendix 2 of the monitoring report (MR). The breakdown due to scheduled maintenance is as per the manufacture's specification. Moreover, it is important to note that all the thirty WTGs was not entirely shut down during these breakdown hours; only the affected WTGs were temporarily taken out of operation.

The verification process involved reviewing the monthly generation records/33/ and breakdown excel sheet /32/ provided by the project proponent (PP). Additionally, an onsite visit to the project site/36/ was conducted, where it was confirmed that only the affected WTGs were shut down while the rest of the WTGs remained operational. This information is consistent with the details mentioned in Section 3.1 and Appendix 2 of the MR/01/. The assessment team also conducted interviews with key personnel from the PP, including senior engineers, junior engineers, and an assistant manager/37/. These interviews took place on 13-July-2022 during the onsite visit /36/. The assessment team has concluded that the breakdowns and the resulting partial shutdown of the project activity do not have a significant impact on the calculation of emission reductions (ER). The project underwent continuous operation, with only the affected parts being temporarily shut down. This approach is deemed acceptable by the assessment team and is verified to align with the methodology. Furthermore, no unforeseen incidents were identified that would affect the applicability of the methodology.

it was observed through monthly generation records, breakdown log sheet records present on project site and tripping details for each month submitted to VKU Assessment/Verification Team by PP that the plant supplied 28,034 MWh of electricity, and thus contributing to 27,381 tCO_{2e} GHG reductions. The emission reduction for this monitoring period pro rata comparing with registered VCS PD is 34,036 tCO_{2e}, whereas actual emission reductions achieved are 27,381 tCO_{2e}, which is 19.55% lower than the estimated emission reductions for the current verification period. Further explanation is provided section 4.5 of this report The ERs achieved in this monitoring period is basically due to low wind, low PLF and higher breakdowns during this monitoring period.

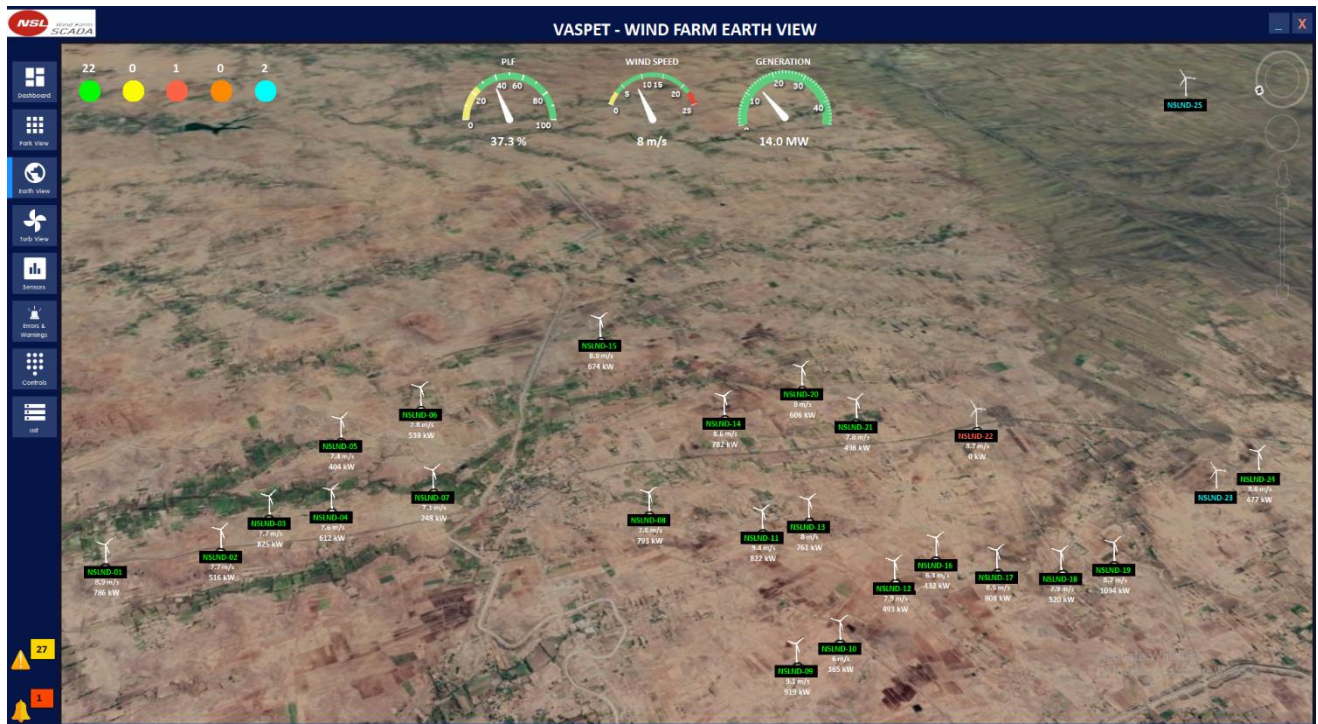


Figure 01: Real Time WTG working mapped down from SCADA installed at project implemented site collected as evidence by VVB.

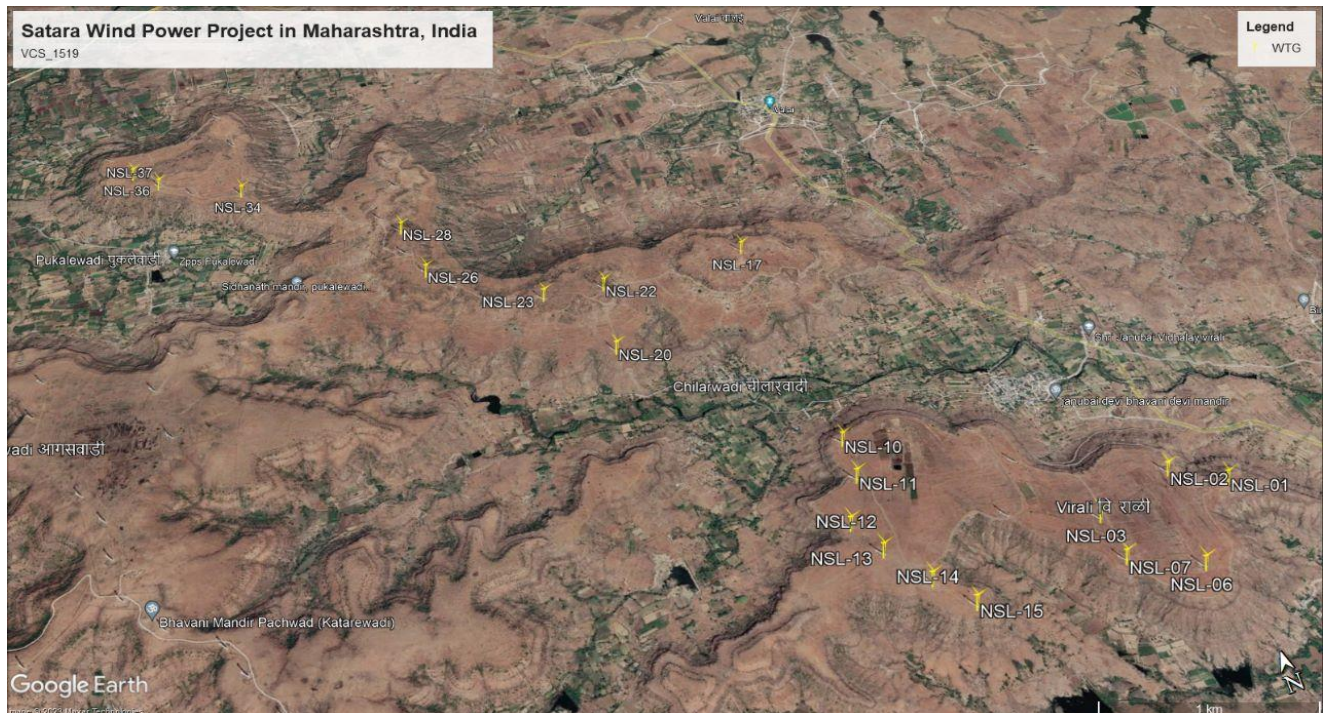


Figure 1.1: Project implemented Location verified and mapped down WTG-wise

The project location was verified by the assessment team through [Google earth pro/34/](#) during desk review and GPS map camera software during onsite visit /36/. Moreover, assessment team confirm that the latitude and longitude as mentioned in the registered VCS PD dated 08-February-2016/3/, VCS Validation Report/11/, VCS MR/1/

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

Make of all WTGs – Vestas

WTG Ref. No.	Date of Commissioning	Geo-Coordinates			
		UTM (Universal Transverse Mercator) format		DD-MM-SS (Degree/minutes/Seconds) format	
		Easting (m)	Northing (m)	Latitude (N)	Longitude (E)
NSL-1	06-March-2014	469336	1934816	<u>17 ° 29' 57.52" N, 74 ° 42' 40.12" E</u>	
NSL-2		469066	1934960	<u>17 ° 30' 2.19" N, 74 ° 42' 30.96" E</u>	
NSL-10		467591	1935712	<u>17 ° 30' 26.58" N, 74 ° 41' 40.90" E</u>	
NSL-11		467555	1935467	<u>17 ° 30' 18.61" N, 74 ° 41' 39.69" E</u>	
NSL-12		467395	1935210	<u>17 ° 30' 10.24" N, 74 ° 41' 34.28" E</u>	
NSL-13		467477	1935008	<u>17 ° 30' 3.67" N, 74 ° 41' 37.07" E</u>	
NSL-14		467616	1934769	<u>17 ° 29' 55.90" N, 74 ° 41' 41.80" E</u>	
NSL-15		467758	1934607	<u>17 ° 29' 50.64" N, 74 ° 41' 46.62" E</u>	
NSL-3	30-March-2014	468573	1934832	<u>17 ° 29' 58.01" N, 74 ° 42' 14.25" E</u>	
NSL-6		468893	1934421	<u>17 ° 29' 44.64" N, 74 ° 42' 25.13" E</u>	
NSL-7		468559	1934585	<u>17 ° 29' 49.97" N, 74 ° 42' 13.79" E</u>	
NSL-20		466692	1936734	<u>17 ° 30' 59.79" N, 74 ° 41' 10.36" E</u>	
NSL-22		466784	1937215	<u>17 ° 31' 15.45" N, 74 ° 41' 13.45" E</u>	
NSL-17	31-March-2014	467652	1937233	<u>17 ° 31' 16.08" N, 74 ° 41' 42.89" E</u>	
NSL-23		466388	1937239	<u>17 ° 31' 17.0" N, 74 ° 41' 01.1" E</u>	
NSL-26		465839	1937687	<u>17 ° 31' 30.76" N, 74 ° 40' 41.37" E</u>	
NSL-28		465767	1938105	<u>17 ° 31' 44.36" N, 74 ° 40' 38.91" E</u>	
NSL-34		464907	1938830	<u>17 ° 32' 7.90" N, 74 ° 40' 9.7" E</u>	

NSL-36		464416	1939096	<u>17 ° 32' 16.53" N, 74 ° 39' 53.02 E"</u>
NSL-37		464263	1939245	<u>17 ° 32' 21.37" N, 74 ° 39' 47.83" E</u>

The implemented project activity is a Greenfield wind power generation activity. The project activity involves installation of 20 Wind Turbine Generators of total 30 MW capacity wind power generation project by NSL Wind Power Company (Satara) Pvt. Ltd. (Project Participant). Start date of the operation of the project activity is commissioning of WTG Ref. No. (NSL-1, NSL-2, NSL-10, NSL-11, NSL-12, NSL-13, NSL-14 and NSL-15) on 06-March-2014 which is the date of commissioning/commercial operation of the 1st set of 9 WTGs and the project activity was fully commissioned on 31-March-2014 which is the date of commissioning/commercial operation of the last set of 7 WTGs (NSL-17, NSL-23, NSL-26, NSL-28, NSL-34, NSL-36 and NSL-37). Assessment team checked the commissioning certificate/29/ and confirmed that the dates of Commission for all the WTGs are correct. The dates of commissioning were also verified by Assessment team during the onsite audit/36/ that there is no change in project design with reference to previous verification/12/and VCS standard version 4.5 /7/ in section 3.3 of the report. The project is implemented as per the description provided in the registered VCS PD/3/.

The power rating of the WTGs has been verified with the name plates as well as with the technical specifications of WTGs submitted to VKU Assessment/Verification Team by PP and also cross checked from the technical manual of the Manufactures/30/. The same could be verified from the VCS Validation Report/11/ 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 10: Technical specifications of generator:

ReGen Powertech	VENSYS 87
POWER	
Rated power	1500 Kw
Cut-in wind speed (10 min. mean)	3 m/s
Rated Wind Speed (10 min. mean)	approx. 12 m/s
Cut-out wind speed (10 min. mean)	22 m/s
Survival wind speed	52.5 m/s
Generator	Variable Speed, Multi-pole Synchronous with Permanent Magnet Excitation
ROTOR	
Diameter	87
Swept area	5942 sq. m
Speed range (variable)	9 to 17.3 rpm
TOWER AND FOUNDATION	
Hub height	85 m
Design	Tubular, Four sections
Foundation type	Floating foundation
CONTROL AND SAFETY SYSTEMS	
Control of output	Pitch Regulation
Speed control	Variable, Micro-controller based
Low Voltage Ride Through (LVRT)	3 seconds
Primary brake system	Aerodynamic Brake, Single Pitch Control/triple redundant
Pitch System	Electromechanical, Maintenance Free Toothed Belt Drive (Patented)
Remote Monitoring	VPN, Visualization via web-browser
TYPE CLASSES	
Wind turbine type class	GL III B

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 ACM0002, Version 16.0 /10/. The organizational role and responsibility as mentioned in the registered VCS PD/3/ is followed onsite. Meters are calibrated as per calibration frequency in registered PD/3/. All the emergency preparedness as mentioned in MR/1/ are followed onsite and no discrepancies were found regarding the same.

The daily operation of the Wind Turbine Generators (WTGs) is overseen by the operator on-site. The operator reports to the Assistant Engineer (AE) - Wind Farm, who is tasked with gathering necessary data from the operator. The AE - Wind Farm records daily generation data for each service connection point and communicates the cumulative generation figures to the management.

The VCS Project Coordinator has the responsibility of annually assessing the achieved emission reduction and documenting these results. This coordination ensures that the project maintains a systematic record of its emissions reductions for compliance and reporting purposes.

Assessment team concludes the following:

- a) There are no material discrepancies between project implementation and the project description provided in the registered PD /3/.
- 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 fixed crediting period of project description/3/ and the applied methodology/10/.
- 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/28/.
- e) Complying with clause 3.24.5 of the VCS Standard version 4.5 Assessment Team confirms that the project has not received or pursued any other form of environmental credit, nor has it become eligible to do so since VCS Validation/11/ or previous VCS Verification/12/
- f) The project Activity is a wind power project and does not involve any supply chain in the project such as manufacturers, wholesalers, distributors and retailers. So, no indirect upstream and downstream GHG emissions are involved in the project activity. Thus, the Scope 3 emissions are not applicable in this project activity.
- g) The project is registered under VCS ³, however PP has submitted the declaration/28/stating, that they will not claim same GHG emission reductions of the project from any other GHG programme for the current monitoring period when project is seeking to get GHG emission reduction from VCS. Audit team also checked the REC/15/ Mechanism database of India and I-REC/16/ mechanism database found that the project activity is not accredited / registered under REC or I-REC mechanism which was verified from the (Renewable Energy Certificate Registry of India) REC/15/ (International-Renewable Energy Certificate Standard Standard) I-REC/16/ 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/28/ for the same.
- h) The project activity complies with indicators for **sustainable development** in the interim approval guidelines for Clean Development Mechanism (CDM) projects from India as discussed under **section 1.11 of MR/1/**. Assessment team has verified the same

³ <https://registry.verra.org/app/projectDetail/VCS/1519>

during on site visit/36/ and found all the indicators to be effective and applicable for the project activity.

As per the VCS Standard Version 4.5⁴ Page no 79, Appendix 03: Document History and Effective dates, For V4.2, serial number 04 states that “it is required by project proponents to demonstrate contributions to a minimum of three SDGs in all monitoring reports verified after the effective date. Effective immediately for all projects that request registration on or after 20-January-2023. Projects that request registration before 20-January-2023 shall demonstrate contributions to at least three SDGs by 20-January-2025”. This is project's seventh periodic verification of fixed crediting period for the Monitoring Period 01-September-2021 to 30-April-2022 (Inclusive of both start and end dates), Since this project is registered before 20-January-2023, so the Project Proponent (PP) must demonstrate contributions to at least three SDGs by 20-January-2025.

For the current monitoring period, the PP is voluntarily showing contributions to three SDGs, as indicated below but has only claimed two SDGs i.e.,

- **SDG no 7.2: (Renewable energy share in the total final energy consumption)**
- **SDG no 13.2 (13.2.1: Tonnes of greenhouse gas emissions avoided or removed)**

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

1. **7.2 i.e. (Renewable energy share in the total final energy consumption)** As a part of this project activity lifetime 28,034 MWh Net renewable electricity has been exported to Indian grid that helps to strengthen the renewable energy share in the energy mix. VKU Assessment/Verification Team has referred previous verification reports /12/ monitoring report for current monitoring period/1/ & emission reduction sheet/2/ which were cross checked from JMRS/26/ & Invoices/27/ submitted to the VKU Assessment/Verification Team for current monitoring period and thus found the above claimed renewable electricity supplied to Indian grid is correct.
2. **8.5 i.e. (Employment Generation from the project Activity):** Due to installation of the project activity PP has provided direct employment to more than 10 people in project implemented area. VKU Assessment/Verification Team has referred the employment records submitted by the PP and focused group discussions/interviews/37/. However, project proponent is not claiming this SDG benefit. Hence, PP did not quantify the same in MR/1/ which is found to be correct by VKU.
3. **13.0 i.e. (Tonnes of greenhouse gas emissions avoided or removed)** Due to installation of this project activity i.e., Wind Turbine generators (WTGs) PP has prevented the release of 27,381 tCO₂ into the atmosphere during current monitoring period i.e., 01-September-2021 to 30-April-2022 (Inclusive of both the days) Thus, proving that the project generates

⁴ <https://verra.org/documents/vcs-standard-v4-5/>

eco-friendly, GHG free power which contributes to sustainable development of the region. VKU Assessment/Verification Team has referred previous verification reports /12/ monitoring report for current monitoring period/1/ & emission reduction sheet/2/ which were cross checked from JMRs/26/& Invoices/27/ submitted to the VKU Assessment/Verification Team for current monitoring period that now conclude that the above claimed greenhouse gas emissions avoided or removal is correct.

Since the project is continuation of activity as per the registered PD, it is a regulatory surplus activity. The green energy target of the Govt of India does not include green energy generated from wind turbines from private parties. This was assessed as the TL is an expert of local regulations and statutes of country India and thus in view of the information as verified above the VKU assessment team is able to conclude that the project has been implemented as described in the registered VCS Project Description version 03 dated 08-February-2016/3/and MR /1/.

All the above stated information was verified by VKU Certification assessment team during onsite visit/36/ at the project implemented site and also by interviewing the site personnel and by conducting focussed group discussion with them /37/.

There are no potential harmful socio-economic and environmental effects in the project activities. The net impact under environmental pollution category is positive as all necessary abatement measures are adopted and periodically monitored. No potential negative environmental and socio-economic impacts in the project activity. The project activity does not have any major adverse impacts on environment during its construction or operational phase. VKU Assessment/Verification Team has assessed the project activity on site and confirms that there were no negative environmental and socio-economic impacts observed during current monitoring period as all necessary measures were found in place which was confirmed during site visit /36/.

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

Audit Type	Period	Program	VVB Name	Number of years
Validation	06-March-2014 to 05-March-2024	VCS	<u>LGAI Technological Center, S.A. (Applus+)</u>	NA
Verification	06-March-2014 to 31-December-2015	VCS	<u>LGAI Technological Center, S.A. (Applus+)</u>	01 Year 09 months 26 days
Verification	01-January-2016 to 30-	VCS	<u>Earthood Services Pvt. Ltd.</u>	01 year 09 months 00

	September-2017			days
Verification	01-October-2017 to 31-August-2018	VCS	<u>Earthood Services Pvt. Ltd.</u>	11 months 00 days
Verification	01-September-2018 to 31-October-2019	VCS	<u>Earthood Services Pvt. Ltd.</u>	01 year 02 months 00 days
Verification	01-November-2019 to 31-October-2020	VCS	<u>LGAI Technological Center, S.A. (Applus+)</u>	01 year 00 months and 00 days
Verification	01-November-2020 to 31-August-2021	VCS	<u>LGAI Technological Center, S.A. (Applus+)</u>	10 months 00 days
Current Verification	01-September-2021 to 30-April-2022	VCS	VKU Certification Pvt Ltd	08 months 00 days
Total	=	=	=	08-year 01 month 26 days

This has been checked by the verification team through validation and previous verification reports already approved and uploaded on Verra's webpage which is deemed accurate and satisfactory to VKU's assessment team.

4.2 Safeguards

4.2.1 No Net Harm

The project activity involves implementation of WTGs as a voluntary measure to strengthen the national grid of India through exploitation of wind power generation potential available to India and in accordance with the Ministry of Environment, Forest and Climate Change (MoEF&CC) Notification dated 14th September 2006 (S.O. 1533(E)⁵, the current project is exempt from Environmental Impact Assessment (EIA) submission. Since the project involves wind-based activities, it is not required to obtain clearance from the Pollution Control Board.

⁵ <http://www.environmentwb.gov.in/pdf/EIA%20Notification,%202006.pdf>

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

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

Furthermore, the project activity has positively impacted the local community by creating job opportunities during construction and operation phases, as verified through on-site interviews and visits by the VKU Assessment Team /37/.

4.2.2 Local Stakeholder Consultation

The project in question i.e., VCS 1519: "Satara Wind Power Project in Maharashtra, India." has undergone stakeholder consultation in compliance with the Verified Carbon Standard (VCS) and local regulations. Various stakeholder groups, including employees of the MSEDCL, local residents, farmers, and contractors, were engaged through multiple phases using methods such as focus group discussions and social mapping.

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

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

During the on-site interviews, the verification team specifically examined the compilation of inputs and feedback from stakeholders, and they found that the project proponent had appropriately considered and accounted for them. As a result, the verification team concluded that the ongoing communication with local stakeholders complies with the established guidelines defined in section 3.18, clause 3.18.3, 3.18.4 of the VCS Standard version 4.5/07/.

The project proponent's efforts in engaging with stakeholders have been deemed suitable and in line with the prescribed requirements.

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

4.3 AFOLU-Specific Safeguards

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

4.4 Accuracy of GHG Emission Reduction and Removal Calculations

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

The project monitoring plan involves total 04 parameter to be monitored;

- 1) **EG_{facility, y}** (Quantity of Net Electricity exported to the grid by the project WTGs to the grid during the year y.);
- 2) **EG_{JMR,NSL,export,y}** (Quantity of Electricity exported by the Project WTGs connected to the feeder i to the grid during the year y.)
- 3) **EG_{JMR,NSL,import,y}** (Quantity electricity imported by the Project WTGs connected to the feeder i from the grid during the year y)
- 4) **EG_{Controller,gen}** (Quantity electricity generated by the project activity WTGs recorded at respective controller meters)

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

The parameter **EG_{facility, y}** value is sourced from Certified Joint Meter Reading (JMRs)/26/, Proper calibrated meters of 0.2s accuracy class installed at each feeder and regularly monitor the Net electricity generated by WTGs, the parameter **EG_{JMR,NSL,export,y}** value is sourced from Joint Meter Reading (JMRs)/26/and Invoices/27/, Proper calibrated meters of 0.2s accuracy class installed at substation regularly monitor the export value which is aggregated on a monthly basis in JMRs & invoices, the parameter **EG_{JMR,NSL,import,y}** value is sourced from Joint Meter Reading (JMRs)/26/and Invoices/27/, Proper calibrated meters of 0.2s accuracy class installed at substation regularly monitor the import value which is aggregated on a monthly basis in JMRs & invoices, the parameter **EG_{Controller,gen}** value is sourced from LCS meter

(Controller meter) available at the each WTGs generation points mentioned in ER sheet/2/ prepared by PP has been reviewed by assessment team thoroughly by cross checking the values of JMRs/26/ submitted by PP and found correct including all the formulae and conversions and aggregations.

The monitoring plan specified in the registered VCS Project Design (PD) version 03, dated 8-February-2016, is diligently being followed at the site. The assessment team has conducted a thorough verification of the entire information flow, starting from data generation and aggregation to recording, calculation, and reporting of the relevant parameters in the Monitoring Report (MR/1/). The emission reductions are based on the net electricity generated and exported from the project.

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

The verification of each monitoring parameter has been discussed later in [section 4.5](#).

According to applied methodology ACM0002; Version 16.0 /10/ the emissions are calculated as below:

According to applicable methodology ACM0002; Version 16.0⁶ under section 5 of Baseline Methodology Procedure with further description under section 5.4-page 12 about Project emissions & under section 5.6-page 18 about Leakage emissions that since project activity is a Wind power project and no other kind of fossil fuel has been used in the current monitoring period on site thus no leakage emission is considered according to the methodology used & since this is a renewable project activity no project emissions from the project activity are considered.

Leakage emissions: $LE_y = 0$

Project Emissions (PE_y) = 0

GHG Calculations:

The calculation of emission reduction has been done in accordance with the applied methodology used i.e., ACM0002 Version 16.0 /10/. 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:

⁶ [OX6IERWMG92J7V3B80TKFSL1QZH5PA \(unfccc.int\)](#)

Baseline emissions are calculated as follows:

Where,

$BE_y = EG_{pj,y} \times EF_{grid,CM,y}$	
$BE_y =$	Baseline Emissions (tCO ₂ /year)
$EG_{pj,y} =$	Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr)
$EF_{grid,CM,y} =$	Combined margin CO ₂ emission factor for grid connected power generation in year y calculated using the latest version of the “Tool to calculate the emission factor for an electricity system” (t CO ₂ /MWh)
Therefore, the baseline emissions for Year 2021 (from 01-September-2021 to 31-December-2021)	
= 16,628.598 MWh * 0.9767 tCO₂/MWh	
= 16,241 tCO₂e (Round down Value)	
Therefore, the baseline emissions for Year 2022 (from 01-January-2022 till 30-April-2022)	
= 11,406.0048 MWh * 0.9767 tCO₂/MWh	
= 11,140 tCO₂e (Round down Value)	
The Total baseline Emissions = 16,241 + 11,140 = 27,381 tCO₂e	

All of the 20 WTGs were in operation throughout the current monitoring period, and the project activity generated 28,034 MWh of energy, resulting in 27,381 tCO₂e GHG reductions.

Estimated Emission Reduction as in VCS PD for the equivalent period of the current Monitoring period, 01-September-2021 to 30-April-2022 (Inclusive of both the days):	
Monitoring Period Start Date	01-September-2021
Monitoring Period End Date	30-April-2022
Days in Current Monitoring period	242
Annual VCUs as per VCS PD	51,335 (tCO ₂ e)
Estimated Emission Reduction as in VCS PD for the equivalent period of the current Monitoring period	= (Annual Estimated GHG emission reductions as per revised VCS PD/Total days in a year) * days in current monitoring period = (51,335 / 365) * 242 = 34,036 (tCO₂e)

The estimated emission reduction for the present monitoring period is 34,036 tCO₂e, however the achieved emission reductions are 27,381 tCO₂e (round down value), or around 19.55% lower than the estimated emission reductions.

Section 5.4 of the Monitoring Report (MR/1/) presents detailed calculations, which have been cross-checked and verified through the compiled Emission Reduction (ER/2/) spreadsheet. The verification team ensured the accuracy of these calculations by referencing the Joint Meter Readings (JMRs/26/) and cross-checking the data with invoices /27/.

The daily generation schedule is prepared by the plant team, and the Power is sold to the Maharashtra State Electricity Distribution Co. Ltd. (MSEDCL). according to the (PPA/23/). The ReGen Power Tech Private Limited team is responsible for monitoring the generation of the Wind Turbine Generators (WTGs) daily and maintains a log book recording daily generation details for each WTG within the project, as measured at the wind farm. The VKU assessment team verified these records during their on-site visit /36/.

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

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

PP has submitted all the evidences like JMRs/26/ and Invoices /27/ to VKU Assessment/Verification Team for verification and assessment of ER Sheet/2/

Hence VKU Assessment/Verification Team can state that the calculation method and formulae used in calculating baseline emission is following the methodology used i.e., ACM0002: "Grid-connected electricity generation from renewable sources - version 16.0" /10/.

4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

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

When assessing the audit trails, VKU also examined:

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

All records needed for monitoring are archived in line with the requirements of the registered monitoring plan. No significant, lack of evidence and missing data were detected during

verification. Hence, the verification team confirms that the monitoring system ensures required quality of the monitoring system to ensure the quality of the monitored data. All internal data are subjected to QA/QC measures.

There are total 04 parameters to be monitored;

- 1) **EG_{facility,y}** (Quantity of Net Electricity exported to the grid by the project WTGs to the grid during the year y.);
- 2) **EG_{JMR,NSL,export,y}** (Quantity of Electricity exported by the Project WTGs connected to the feeder i to the grid during the year y.)
- 3) **EG_{JMR,NSL,import,y}** (Quantity electricity imported by the Project WTGs connected to the feeder i from the grid during the year y)
- 4) **EG_{Controller,gen}** (Quantity electricity generated by the project activity WTGs recorded at respective controller meters) according to the monitoring plan and monitoring report/1/.

The below table describe how the parameter **EG_{facility,y}** (Quantity of Net Electricity exported to the grid by the project WTGs to the grid during the year y), that is to be measured according to the monitoring plan, has been verified to confirm that the actual monitoring complies with the monitoring plan, monitoring data has been thoroughly assessed and that the calibration requirements are met:-

Table No: 12 Assessment of Parameter EG_{facility,y} (Quantity of Net Electricity exported to the grid by the project WTGs to the grid during the year y)

Parameter	EG _{facility,y} (Quantity of Net Electricity exported to the grid by the project WTGs to the grid during the year y)		
Means of verification	Criteria/Requirements	Assessment/Observation	
	Measuring /Reading /Recording frequency	The parameter is calculated parameter and recorded at least monthly by energy meter. The quantity of net electricity exported to the grid by WTGs is recorded with the aid of energy meter for each feeder in MWh for cross check of import and export electricity.	

	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/3/ and monitoring methodology/10/. Also, in current monitoring period there is no deviation from the stated procedures in the registered monitoring plan. This was verified by assessment team during desk review and by Team Leader during onsite visit and interviews/37/ with site personnel.
	Monitoring equipment	No monitoring equipment is used as this parameter is calculated. However, the parameter $EG_{JMR, NSL, export, y}$ and $EG_{JMR, NSL, import, y}$ is calculated using measured values, are continuously monitored, hourly measured and monthly recorded.
	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 used to calculate $EG_{JMR, NSL, export, y}$ and $EG_{JMR, NSL, import, y}$ is 0.2s, which is as per the registered PD/03/ which is as per the norm defined in PPA /23/
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes, the accuracy is valid for the entire current monitoring period i.e., 01-September-2021 to 30-April-2022 (Inclusive of both the days)
	Calibration frequency /interval:	PP has considered CEA order dated 17-March-2006/22/; which prescribes under the para 18(b) that " all the meters shall be tested once in five years. " Thus, frequency of the calibration is considered for five years. To support the same PP took deviation in previous Monitoring Period (<u>i.e., 01-January-</u>

		<u>2016 to 30-September-2017 (Inclusive of both the days)</u> deviation had been taken on account of delay in meter calibration. As per VCS PD “The project adheres to all the mandatory regulatory and statutory requirements at the state as well as national level.” This applies to current monitoring period too.
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer’s specifications?	Yes, it is in line with the monitoring plan & registered methodology. Outlined in the registered VCS PD dated 08-February-2016/3/ The calibration frequency is once in three years as per PPA/23/ However due to uneven practise of performing calibration of state electricity board Accordingly, PP has considered CEA order dated 17-March-2006/22/; which prescribes under the para 18(b) that "all the meters shall be tested once in five years." Thus, validity of the calibration is considered for five years & for that PP took deviation in previous Monitoring Period (<u>i.e., 01-January-2016 to 30-September-2017</u> (Inclusive of both the days) deviation had been taken on account of delay in meter calibration. As per VCS PD “The project adheres to all the mandatory regulatory and statutory requirements at the state as well as national level.” Thus, validity of the calibration is considered for five years which is in accordance with the national standards i.e., Clause 18 of Central Electricity Authority (Installation and Operation of Meters) 2018 /22/
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes, Calibration certificates /24/ of the measuring equipment’s is carried out by State DISCOM i.e., Maharashtra State Electricity Distribution Company Limited. All the meters are tested by Maharashtra State Electricity Distribution Company Limited on a periodic basis. In case of any faulty

		readings observed appropriate corrective action will be taken. If the error is found beyond the permissible limits, the PP will inform the respective agency so as to immediately rectify the error in the instrument, which was confirmed during onsite visit while interviewing/37/ the site personnel at project site/PP/Consultant.
	Is(are) calibration(s) valid for the whole reporting period?	Yes, the calibration is valid throughout the reporting period. The Project Proponent (PP) has followed the national standards prescribed by the Central Electricity Authority (CEA) for meter calibration, which requires testing of meters once every five years as per the CEA order dated 17-March-2006/22/. The PP has taken deviation in the previous monitoring period PP <u>(i.e., 01-January-2016 to 30-September-2017 (Inclusive of both the days))</u> to account for the delay in meter calibration, in line with the VCS PD and Clause 18 of the Central Electricity Authority (Installation and Operation of Meters) 2018/22/. This demonstrates the PP's adherence to mandatory regulatory and statutory requirements at the state and national level. Hence the calibration is valid for the whole reporting period. i.e., 01-September-2021 to 30-April-2022 (Inclusive of both the days).
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes. The calibration is carried out appropriately for current monitoring as per the registered monitoring plan and VCS VVS manual version 3.2/8/& as per PPA/23/ The calibration is carried out for a measuring range i.e., CTR: 500/1A, PTR: 33kV/110V & MF: 1500 with accuracy class 0.2s.
	How were the values in the monitoring report verified?	Cumulative value of EG facility,y for entire monitoring period 01-September-2021 to 30-April-2022 (inclusive of both dates) is

		reported in the monitoring report/1/, and monthly values in the ER calculation sheet/2/ in MWh. The monthly values were verified from the JMRs/26/ and cross checked from invoices/27/ thus found to be consistent. Value of this parameter for the current monitoring period was verified as 28,034.60 <table><tr><th>Year</th><th>Net Electricity Generation (MWh)</th></tr><tr><td>2021</td><td>16,628.60</td></tr><tr><td>2022</td><td>11,406.00</td></tr><tr><td>Total</td><td>28,034 (ROUNDDOWN VALUE)</td></tr></table> MWh.	Year	Net Electricity Generation (MWh)	2021	16,628.60	2022	11,406.00	Total	28,034 (ROUNDDOWN VALUE)
Year	Net Electricity Generation (MWh)									
2021	16,628.60									
2022	11,406.00									
Total	28,034 (ROUNDDOWN VALUE)									
If applicable, has the reported data been cross-checked with other available data?	The monthly reported values of EG_{facility,y} in JMRs/26/ were further cross checked with the monthly invoices /27/ raised by the PP to Maharashtra State Electricity Distribution Co. Ltd. (MSEDCL) which is found to be consistent with the PPA/23/									
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	On site personnel interview/37/ with the project stakeholder of the project activity confirms that the necessary QA/QC procedures are in place and the data management system is effective and reliable. Every month these meter readings will be recorded by MSEDCL representative and plant personnel. The meters at the substation will be two-way meters and will be in the custody of MSEDCL. The quantity of net electricity supplied is cross-verified from the invoice raised on MSEDCL by the project proponent									
In case project proponents have temporarily not monitored the parameter, has either i) a deviation	No such issues.									

	been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	
Findings	CL#02 & CAR#03 were raised and resolved	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan. The emission reduction calculation for the project activity is estimated based on the electricity supplied by the project. Since 100% data was verified, the team can ascertain that the values taken for emission reduction calculation are free from material errors.	

The below table describe how the parameter **EG_{JMR,NSL,Import,y}** (Quantity electricity imported by the Project WTGs connected to the feeder i from the grid during the year y), that is to be measured according to the monitoring plan, has been verified to confirm that the actual monitoring complies with the monitoring plan, monitoring data has been thoroughly assessed and that the calibration requirements are met:-

Table No: 13 Assessment of Parameter EG_{JMR,NSL,Import,y} (Quantity electricity imported by the Project WTGs connected to the feeder i from the grid during the year y)

Parameter	EG _{JMR,NSL,Import,y} (Quantity electricity imported by the Project WTGs connected to the feeder i from the grid during the year y)	
Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	The parameter is calculated from measured parameter as Monthly Import value of Wind Farm (Credit Notes Reading) and Summation of Controller Reading of project WTGs and non-project WTGs. The parameter is reported monthly in the credit note, which is prepared for each project developer separately. The electricity imported by each WTG is recorded with the aid of energy meter for individual feeders in kWh for cross check of export and net export supplied to the grid.

	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/3/ and monitoring methodology/10/. Also, in current monitoring period there is no deviation from the stated procedures in the registered monitoring plan. This was verified by assessment team during desk review and by Team Leader during onsite visit and interviews/37/ with site personnel.
	Monitoring equipment	Monitoring equipment is not utilized since this particular parameter is derived through calculation. Nonetheless, the input values essential for determining this parameter are continually under observation; they are gauged on an hourly basis and documented on a monthly basis. The wind turbine generators (WTGs) associated with the project are linked to various distribution feeders, and each feeder has its own distinct metering setup situated at the project site. It's worth noting that the WTGs from other projects, not part of this activity, are also interconnected with these same feeders. All generated electricity, originating from both the WTGs within the project and those external to it, is channelled into the Indian grid. On a monthly basis, the electricity output of all WTGs linked to each feeder is meticulously recorded. This documentation occurs during Joint Meter Reading (JMR) sessions, which involve representatives from MSEDCL and officials from the Operations and Maintenance (O&M) contracting party, ensuring transparency. Using the data amassed from the JMRs and the individual WTG controller meter readings, the electricity contributed to the grid exclusively by the WTGs associated with the

		project is calculated by MSEDCL. This computation employs an allocation procedure to fairly distribute the electricity production among all WTGs connected to the feeders. Subsequently, MSEDCL compiles credit notes for each developer participating in the project, detailing their respective contributions based on the calculated electricity supply.
	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 used to calculate $EG_{JMR, NSL, import, y}$ is 0.2s, which is as per the registered PD/03/ which is as per the norm defined in PPA.
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes, the accuracy is valid for the entire current monitoring period i.e., 01-September-2021 to 30-April-2022 (Inclusive of both the days)
	Calibration frequency /interval:	The calibration frequency is once in three years as per PPA/23/ and VCS PD dated 08-February-2016/3/. However, compared to the VCS PD, which prescribes calibration frequency once in three years, meters can be calibrated with some delay during the monitoring period. PP considers the CEA order dated 17-March-2006/22/ which mandates testing meters once in five years, validating the calibration for five years. PP previously took deviation in the monitoring period (<u>i.e., 01-January-2016 to 30-September-2017 (Inclusive of both the days)</u>) due to meter calibration delay. VCS PD ensures compliance with state and national requirements. Thus,

		the calibration validity of five years aligns with national standards as per Clause 18 of Central Electricity Authority (Installation and Operation of Meters) 2018/22/
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	The calibration interval in line with the monitoring plan and there is no delay in Calibration of meters during the current monitoring period. The Project Proponent (PP) follows national standards set by the Central Electricity Authority (CEA) for meter calibration, which requires testing every five years as per the CEA order dated 17-March-2006/22/. The PP accounts for the delay in meter calibration through deviation taken in the previous monitoring period, in line with VCS PD and Clause 18 of the Central Electricity Authority (Installation and Operation of Meters) 2018 /22/, showcasing compliance with mandatory regulatory and statutory requirements at the state and national level.
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes, Calibration certificates /24/ of the measuring equipment's is carried out by State DISCOM i.e., Maharashtra State Electricity Distribution Company Limited. All the meters are tested by Maharashtra State Electricity Distribution Company Limited on a periodic basis. In case of any faulty readings observed appropriate corrective action will be taken. If the error is found beyond the permissible limits, the PP will inform the respective agency so as to immediately rectify the error in the instrument, which was confirmed during onsite visit while interviewing/37/ the site personnel at project site/PP/Consultant.

	Is(are) calibration(s) valid for the whole reporting period?	Yes, the calibration is valid throughout the reporting period. The Project Proponent (PP) has followed the national standards prescribed by the Central Electricity Authority (CEA) for meter calibration, which requires testing of meters once every five years as per the CEA order dated 17-March-2006/22/. The PP has taken deviation in the previous monitoring period PP <u>(i.e., 01-January-2016 to 30-September-2017 (Inclusive of both the days))</u> to account for the delay in meter calibration, in line with the VCS PD and Clause 18 of the Central Electricity Authority (Installation and Operation of Meters) 2018 /22/. This demonstrates the PP's adherence to mandatory regulatory and statutory requirements at the state and national level. Hence the calibration is valid for the whole reporting period. i.e., 01-September-2021 to 30-April-2022 (Inclusive of both the days).
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes. The calibration is carried out appropriately for current monitoring as per the registered monitoring plan and VCS VWS manual version 3.2/8/& as per PPA/23/ The calibration is carried out for a measuring range i.e., CTR: 500/1A, PTR: 33kV/110V & MF: 1500 with accuracy class 0.2s.
	How were the values in the monitoring report verified?	Cumulative value of EG_{JMR,NSL,Import,y} for entire monitoring period 01-September-2021 to 30-April-2022 (inclusive of both dates) is reported in the monitoring report/1/, and monthly values in the ER calculation sheet/2/ in kWh. The monthly values were verified from the JMRs/26/ and cross checked from invoices/27/ thus found to be consistent. Value of this parameter for the current monitoring period was verified as 31,750.37 kWh.

		Year	Total Import Electricity (kWh)
		2021	13,568.65
		2022	18,181.71
		Total	31,750.37
	If applicable, has the reported data been cross-checked with other available data?	The monthly reported values of EG JMR,NSL,Import,y were verified from JMRs issued to PP by state entity i.e., MSEDCL which were further cross checked with the monthly invoices /27/ raised by the PP to respective captive user as specified in PPA/23/ and thus found to be consistent	
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	On site personnel interview/37/ with the project stakeholder of the project activity confirms that the necessary QA/QC procedures are in place and the data management system is effective and reliable. The electricity imported by the WTGs is recorded. The electricity imported is adjusted against the export by the project activity to the grid. To be cross-checked with monthly invoices or receipts of payments.	
	In case project proponents have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	No such issues.	
Findings	CL#02 & CAR#03 were raised and resolved		
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.		

	The emission reduction calculation for the project activity is estimated based on the electricity supplied by the project. Since 100% data was verified, the team can ascertain that the values taken for emission reduction calculation are free from material errors.
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The below table describe how the parameter **EG_{JMR,NSL,Export,y}** (Quantity electricity exported by the Project WTGs connected to the feeder i from the grid during the year y), that is to be measured according to the monitoring plan, has been verified to confirm that the actual monitoring complies with the monitoring plan, monitoring data has been thoroughly assessed and that the calibration requirements are met:-

Table No: 13 Assessment of Parameter EG_{JMR,NSL,Export,y} (Quantity electricity exported by the Project WTGs connected to the feeder i from the grid during the year y)

Parameter	EG _{JMR,NSL,Export,y} (Quantity electricity exported by the Project WTGs connected to the feeder i from the grid during the year y)	
Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	The parameter is calculated using the Monthly Export value of the Wind Farm (from JMR Reading) and the sum of controller readings of project and non-project WTGs. It's reported monthly in credit notes for each project developer. Electricity imported by each WTG is recorded via energy meters on individual feeders to cross-check exported and net supplied electricity to the grid.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/3/ and monitoring methodology/10/. Also, in current monitoring period there is no deviation from the stated procedures in the registered monitoring plan. This was verified by assessment team during desk review and by Team Leader during onsite visit and interviews/37/ with site personnel.
	Monitoring equipment	Monitoring equipment isn't used. Input values are continuously monitored, hourly measured, and monthly recorded. Project WTGs share feeders with non-project WTGs. All generated electricity is fed to the grid, with monthly

		readings taken. MSEDCL calculates project electricity supplied using JMR and WTG data, preparing credit notes for developers.
	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 used to calculate ($EG_{JMR, NSL, Export, y}$) is 0.2s, which is as per the registered PD/03/ which is as per the norm defined in PPA.
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes, the accuracy is valid for the entire current monitoring period i.e., 01-September-2021 to 30-April-2022 (Inclusive of both the days)
	Calibration frequency /interval:	The calibration frequency is once in three years as per PPA/23/ and VCS PD dated 08-February-2016/3/. However, compared to the VCS PD, which prescribes calibration frequency once in three years, meters can be calibrated with some delay during the monitoring period. PP considers the CEA order dated 17-March-2006/22/ which mandates testing meters once in five years, validating the calibration for five years. PP previously took deviation in the monitoring period (<u>i.e., 01-January-2016 to 30-September-2017 (Inclusive of both the days)</u>) due to meter calibration delay. VCS PD ensures compliance with state and national requirements. Thus, the calibration validity of five years aligns with national standards as per Clause 18 of Central Electricity Authority (Installation and Operation of Meters) 2018 /22/.

	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	The calibration interval in line with the monitoring plan & there is no delay in Calibration of meters during the current monitoring period The Project Proponent (PP) follows national standards set by the Central Electricity Authority (CEA) for meter calibration, which requires testing every five years as per the CEA order dated 17-March-2006/22/. The PP accounts for the delay in meter calibration through deviation taken in the previous monitoring period, in line with VCS PD and Clause 18 of the Central Electricity Authority (Installation and Operation of Meters) 2018 /22/, showcasing compliance with mandatory regulatory and statutory requirements at the state and national level.
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes, Calibration certificates /24/ of the measuring equipment's is carried out by State DISCOM i.e., Maharashtra State Electricity Distribution Company Limited. All the meters are tested by Maharashtra State Electricity Distribution Company Limited on a periodic basis. In case of any faulty readings observed appropriate corrective action will be taken. If the error is found beyond the permissible limits, the PP will inform the respective agency so as to immediately rectify the error in the instrument, which was confirmed during onsite visit while interviewing/37/ the site personnel at project site/PP/Consultant.
	Is(are) calibration(s) valid for the whole reporting period?	Yes, the calibration is valid throughout the reporting period. The Project Proponent (PP) has followed the national standards prescribed by the Central Electricity Authority (CEA) for meter calibration, which requires

		testing of meters once every five years as per the CEA order dated 17-March-2006/22/. The PP has taken deviation in the previous monitoring period PP (i.e., 01-January-2016 to 30-September-2017 (Inclusive of both the days) to account for the delay in meter calibration, in line with the VCS PD and Clause 18 of the Central Electricity Authority (Installation and Operation of Meters) 2018 /22/. This demonstrates the PP's adherence to mandatory regulatory and statutory requirements at the state and national level. Hence the calibration is valid for the whole reporting period. i.e., 01-September-2021 to 30-April-2022 (Inclusive of both the days).
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes. The calibration is carried out appropriately for current monitoring as per the registered monitoring plan and VCS VWS manual version 3.2/8/& as per PPA/23/ The calibration is carried out for a measuring range i.e., CTR: 500/1A, PTR: 33kV/110V & MF: 1500 with accuracy class 0.2s.
	How were the values in the monitoring report verified?	Cumulative value of EG JMR,NSL,Export,y for entire monitoring period 01-September-2021 to 30-April-2022 (inclusive of both dates) is reported in the monitoring report/1/, and monthly values in the ER calculation sheet/2/ in kWh. The monthly values were verified from the JMRs/26/ and cross checked from invoices/27/ thus found to be consistent. Value of this parameter for the current monitoring period was verified as 28,066,353.36 kWh.

		<table><tr><th>Year</th><th>Total Export Electricity (kWh)</th></tr><tr><td>2021</td><td>16,642,166.89</td></tr><tr><td>2022</td><td>11,424,186.47</td></tr><tr><td>Total</td><td>28,066,353.36</td></tr></table>	Year	Total Export Electricity (kWh)	2021	16,642,166.89	2022	11,424,186.47	Total	28,066,353.36
	Year	Total Export Electricity (kWh)								
	2021	16,642,166.89								
	2022	11,424,186.47								
	Total	28,066,353.36								
If applicable, has the reported data been cross-checked with other available data?	The monthly reported values of EG JMR,NSL,Export,y were verified from JMRs issued to PP by state entity i.e., MSEDCL which were further cross checked with the monthly invoices /27/ raised by the PP to respective captive user as specified in PPA/23/ and thus found to be consistent									
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	On site personnel interview/37/ with the project stakeholder of the project activity confirms that the necessary QA/QC procedures are in place and the data management system is effective and reliable. The electricity imported by the WTGs is recorded. The electricity imported is adjusted against the export by the project activity to the grid. To be cross-checked with monthly invoices or receipts of payments.									
In case project proponents have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	No such issues.									
Findings	CL#02, CAR#02 & CAR#03 were raised and resolved									
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.									

	The emission reduction calculation for the project activity is estimated based on the electricity supplied by the project. Since 100% data was verified, the team can ascertain that the values taken for emission reduction calculation are free from material errors.
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The below table describe how the parameter **EG_{Controller, gen}** (Quantity electricity generated by the project activity WTGs recorded at respective controller meters), 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 Assessment of Parameter EG_{Controller, gen} (Quantity electricity generated by the project activity WTGs recorded at respective controller meters)

Parameter	EG _{Controller, gen} (Quantity electricity generated by the project activity WTGs recorded at respective controller meters)	
Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	The parameter will be monitored continuously and recorded at least monthly by LCS meter (Controller meter). The electricity generated by each individual wind turbine generator (WTG) is recorded using an LCS meter, which measures the gross electricity generated in kilowatt-hours (kWh). This data is used for cross-checking the export and net electricity supplied to the grid, ensuring accurate monitoring of the project's electricity generation.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/3/ and monitoring methodology/10/. Also, in current monitoring period there is no deviation from the stated procedures in the registered monitoring plan. This was verified by assessment team during desk review and by Team Leader during onsite visit and interviews/37/ with site personnel.
	Monitoring equipment	This parameter is measured through LCS meter (Controller meter) integrated with WTG

		and monitored via online monitoring system (SCADA) used for continuously measuring, and recording the Gross electricity generated by each WTG details are provided in section 4.3 of MR/1/.
	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?	Not Applicable for this parameter.
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Not Applicable for this parameter.
	Calibration frequency /interval:	Not Applicable for this parameter.
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Not Applicable for this parameter.
	Is the calibration of measuring equipment carried out by an accredited	It is not possible to calibrate controller because it is integral part of WTG cannot be removed during operation. Same has been

	person or institution?	confirmed through personal interviews of site personnel during on site assessment.
	Is(are) calibration(s) valid for the whole reporting period?	Not Applicable for this parameter.
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Each WTG is equipped with a precise microprocessor-based multi-function relay (MFR) LCS meter. This relay utilizes software to accurately sample and process generated electricity data. The recorded information is automatically entered into the SCADA system, ensuring minimal likelihood of data misinterpretation. The O&M contractor generates daily reports from SCADA-recorded data, which then serve as the foundation for monthly generation reports. The robust monitoring procedures ensure accurate data transmission.
	How were the values in the monitoring report verified?	Cumulative value of EG Controller, gen for entire monitoring period 01-September-2021 to 30-April-2022 (inclusive of both dates) is reported in the monitoring report/1/, and monthly values in the ER calculation sheet/2/ in kWh. The monthly values were verified from the Monthly generation reports recorded in electronic format by O&M contractor/25/ thus found to be consistent. Value of this parameter for the current monitoring period was verified as 29,002,949 kWh.

		<table><tr><th>Year</th><th>Gross Electricity Generation (kWh)</th></tr><tr><td>2021</td><td>17,460,530</td></tr><tr><td>2022</td><td>11,542,419</td></tr><tr><td>Total</td><td>29,002,949 (29003 MWh)</td></tr></table>	Year	Gross Electricity Generation (kWh)	2021	17,460,530	2022	11,542,419	Total	29,002,949 (29003 MWh)
	Year	Gross Electricity Generation (kWh)								
	2021	17,460,530								
	2022	11,542,419								
Total	29,002,949 (29003 MWh)									
If applicable, has the reported data been cross-checked with other available data?	The monthly reported values of EG Controller, gen in logged electronically on a monthly basis by O&M contractor on its online portal. The value of this parameter shall be compared with the value of $EG_{PJ,y}$.									
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, on a monthly basis, this data parameter is electronically logged by the O&M contractor on its online portal. The value of this parameter is compared with the value of $EG_{PJ,y}$, and the conservative approach is taken by the PP for estimating the net electricity supplied value for the calculation of emission reduction. This was confirmed by the assessment team during on-site personnel interview/37/ with the site personnel of the project activity & thus confirms that the necessary QA/QC procedures 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	CL#02 were raised and resolved									
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be									

	applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan. The emission reduction calculation for the project activity is estimated based on the electricity supplied by the project. Since 100% data was verified, the team can ascertain that the values taken for emission reduction calculation are free from material errors.
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Table No: 14 Data and Parameters Available at Validation or Ex-ante parameters:

Parameter	Unit	Description	Value
$EF_{grid,CM,y}$	tCO ₂ /MWh	Combined Margin CO ₂ Emission Factor in year y	0.9767 tCO ₂ /MWh is consistent with the registered VCS PD Version 03 dated 08-February-2016/3/
$EF_{grid,OMsimple,y}$	tCO ₂ /MWh	Simple operating margin emission factor of Indian Grid	0.9857 tCO ₂ /MWh is consistent with the registered VCS PD Version 03 dated 08-February-2016/3/ Calculated from <u>CEA database, Version 10, December-2014/21/</u>
$EF_{grid,BM,y}$	tCO ₂ /MWh	Combined Margin CO ₂ Emission Factor in year y	0.9495 tCO ₂ /MWh is consistent with the registered VCS PD Version 03 dated 08-February-2016/3/ Calculated from <u>CEA database, Version 10, December-2014/21/</u>

Calibration of meters/24/:

During the verification assessment of the project activity, accuracy of all the metering have been checked and found appropriate by assessment team during onsite visit/36/. The installation and working conditions of the meters were checked during the site inspection/36/ and were found to be satisfactory as compared to the provision of calibration/testing frequency, prescribed under the VCS PD/3/, the meters are supposed to undergo testing/calibration once in a year. The meter calibration is not under the purview of PP.

MSEDCL is the sole authority to conduct the meter calibration and in absence of annual practice of calibration, PP has considered CEA order dated 17-March-2006; which prescribes under the para 18(b) that "all the meters shall be tested once in five years." Thus, validity of the calibration is considered for five years. Details of meters are provided in below table:

Table No: 15 Calibration details of Feeder meters: The calibration details of meters installed by Tamil Nadu Electricity Board for measurement of $EG_{facility,y}$, $EG_{JMR,NSL,export,y}$ $EG_{JMR,NSL,import,y}$ are as below.

WTG Ref No	Feeder No	Energy Meter - S.No	Previous Calibration	Due Date	Current Calibration	Due Date
NSL-1 NSL-2 NSL-3 NSL-6 NSL-7 NSL-10 NSL-11 NSL-12 NSL-13 NSL-14 NSL-15	F-02	<u>Main Meter:</u> <u>Make: Elster,</u> <u>S. No: 13277651</u> <u>Class: 0.2s</u>	20-August-2020	19-August-2025	03-February-2022	02-February-2027
		<u>Check Meter:</u> <u>Make: Elster,</u> <u>S. No: 13277650</u> <u>Class: 0.2s</u>	20-August-2020	19-August-2025	03-February-2022	02-February-2027
NSL-20 NSL-22 NSL-17 NSL-23 NSL-26 NSL-34 NSL-36 NSL-37	F-01	<u>Main Meter:</u> <u>Make: Elster,</u> <u>S. No: 13277649</u> <u>Class: 0.2s</u>	20-August-2020	19-August-2025	03-February-2022	0 2-February-2027
		<u>Check Meter:</u> <u>Make: Elster,</u> <u>S. No: 02814525</u> <u>Class: 0.2s</u>	20-August-2020	19-August-2025	03-February-2022	02-February-2027
NSL-28	F-05	<u>Main Meter:</u> <u>Make: Elster,</u> <u>S. No: 13277639</u> <u>Class: 0.2s</u>	20-August-2020	19-August-2025	03-February-2022	02-February-2027

		<u>Check Meter:</u> <u>Make: Elster.</u> <u>S. No: 13277640</u> <u>Class: 0.2s</u>	20-August-2020	19-August-2025	03-February-2022	02-February-2027
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There are twenty WTGs and three feeders involved for the electricity import and export. The provision of calibration/testing frequency, prescribed under the VCS PD/3/. PP has considered CEA order dated 17-March-2006; which prescribes under the para 18(b)/22/ that "all the meters shall be tested once in five years." Thus, validity of the calibration is considered for five years. This is verified by assessment team from the calibration certificates/24/ submitted by the PP. As per VCS PD "The project adheres to all the mandatory regulatory and statutory requirements at the state as well as national level & hence acceptable to VKU assessment team.

The energy meter calibration certificates/24/ are checked and found that the calibration details provided in the MR /1/ are correct. From the verification of above table, verification team also confirms that the energy meter calibrations are valid for the complete monitoring period i.e., from 01-September-2021 to 30-April-2022, including both the start and end dates.

The meters in use are two-way devices that measure both electricity import and export, providing the net electricity consumption data. According to the Power Purchase Agreement with the electricity distribution utility, there are two meters: a main meter and a backup meter. Both function as two-way export-import meters, calculating both exported and imported electricity to the grid.

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

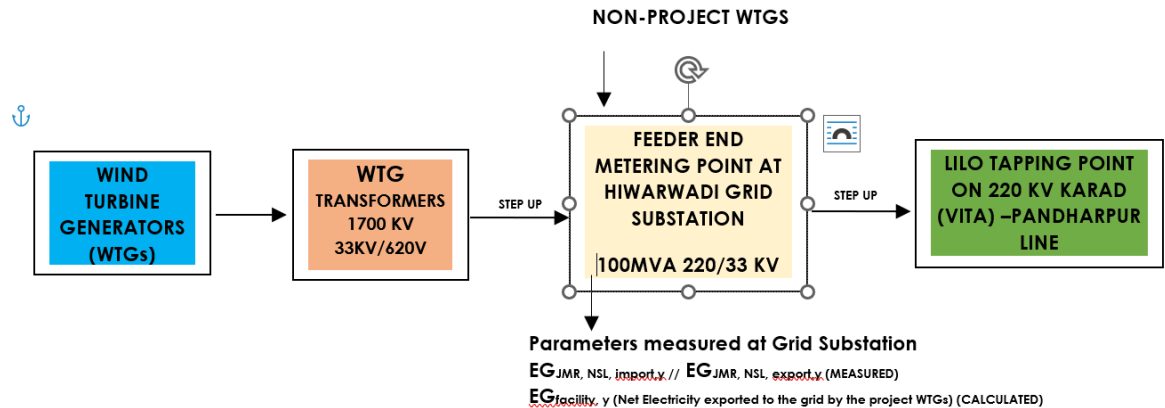


Figure No 02: Project Single Line Diagram

Calculation of net electricity export to the grid by project activity WTG:

To compute the net electricity supplied by individual wind turbines (WTGs), main meter readings are allocated based on Local Control Station (LCS) meter readings from each WTG. LCS meter readings for project activity WTGs are electronically archived continuously. Monthly joint meter readings are taken at the MSEDCL substation, using cumulative LCS meter readings for monthly allocation purposes. Both main and check meters undergo calibration every five years.

Apportioning Procedure followed:

The allocation of net electricity supplied to the grid by the project activity is determined using a specific apportioning procedure, which is outlined as follows:

$EG_{JMR, Export}$ = Electricity exported by all the WTGs (project WTGs & non-project WTGs), as recorded by the main meter at the substation

$EG_{JMR, Import}$ = Electricity imported by all the WTGs (project WTGs & non-project WTGs), as recorded by the main meter at the substation

$EG_{Controller, gen}$ = Electricity exported by a project WTG, as measured at the controller

$EG_{Controller, gen, total}$ = Electricity exported by all the WTGs (project activity & non project activity) connected to the main meter at the substation, measured at the controller of each WTG

$\sum EG_{Controller, gen}$ = Summation of electricity generated by the project activity WTGs recorded at respective LCS meters.

$EG_{JMR, NSL, export}$ = Electricity exported by a WTG to the grid, calculated

$EG_{JMR, NSL, import}$ = Electricity imported by a WTG from the grid, calculated.

Electricity exported by each WTG is apportioned on the basis of electricity exported recorded at the controller of each WTG and the electricity exported at the main meter and mentioned in the JMR. The export multiplication factor is calculated as follows-

$$\text{Export Multiplication Factor} = \text{EG}_{\text{JMR, Export}} \div \text{EG}_{\text{Controller, gen, total}} \dots\dots\dots (1)$$

Thus the energy exported by a WTG to the grid is given by the equation-

$$\text{EG}_{\text{JMR, NSL, export}} = \text{Export Multiplication factor} \times \sum \text{EG}_{\text{Controller, gen}} \dots\dots\dots (2)$$

As the controller meter doesn't record import, the apportioning of energy imported by each WTG is also done on the basis of electricity exported recorded at the controller of each WTG and the electricity imported at the main meter and mentioned in the JMR. The import multiplication factor is calculated as follows-

$$\text{Import Multiplication Factor} = \text{EG}_{\text{JMR, Import}} \div \text{EG}_{\text{Controller, gen, total}} \dots\dots\dots (3)$$

Thus the energy imported by a WTG to the grid is given by the equation-

$$\text{EG}_{\text{JMR, NSL, import}} = \text{Import Multiplication factor} \times \sum \text{EG}_{\text{Controller, gen}} \dots\dots\dots (4)$$

The net electricity exported by the WTGs of the project is given by the equation-

$$\text{EG}_{\text{facility, y}} = \sum \text{EG}_{\text{JMR, NSL, export}} - \sum \text{EG}_{\text{JMR, NSL, import}} \dots\dots\dots (5)$$

$$\sum \text{EG}_{\text{JMR, NSL, export}} = \text{EG}_{\text{JMR, NSL, export, y}}$$

$$\sum \text{EG}_{\text{JMR, NSL, import}} = \text{EG}_{\text{JMR, NSL, import, y}}$$

Based on the above calculation, a monthly statement is prepared, signed by the Project Proponent (PP) representatives, and endorsed by the state utility (MSEDCL). This statement includes three key figures: total electricity exported to the grid, total electricity imported from the grid, and net electricity supplied. Net electricity supplied is calculated as the difference between electricity exported and imported by the project activity for that month.

Upon receiving the "Monthly Statement/credit note," the Project Participant generates invoices for the sale of electricity and submits them to the respective district-level MSEDCL office. MSEDCL then makes payments based on these invoices. The value of net electricity supplied, as stated in the monthly statement, can be cross-checked with the amounts specified in the monthly invoices, ensuring accuracy and transparency in the payment process.

Daily data at the project site is collected electronically, while monthly data is documented in hard copies. The Project Proponent is responsible for maintaining comprehensive and precise records of all this data as part of the monitoring process. These records must be retained for a minimum of 2 years after the end of the crediting period or the last issuance of Verified Carbon

Units (VCUs) for the project activity, whichever comes later. This practice ensures the availability of historical project data for compliance and auditing purposes.

The project proponent has engaged ReGen Power Tech Private Limited under an "Operation and Maintenance" contract for ten years, starting from the commissioning date of each WTG. ReGen oversees daily monitoring of WTG generation, ensures operational safety, and manages scheduled and breakdown maintenance. They maintain a logbook that records daily generation details for each WTG within the project, as metered at the wind farm.

The registered VCS Project Description (PD) version 03 dated 08-February-2016/3/ & MR /1/ and site audit observations confirm that the metering equipment are sealed and maintained by the Maharashtra State Electricity Distribution Company Limited (MSEDCL).

Each WTG have a LCS meter (Controller meter) installed in electronical panel of WTG for recorded continuously by the online monitoring station. This reading can also be seen in the electronic panel installed inside the WTG tower. The LCS meter (Controller meter) do not require calibration as the energy readings of electricity generated at the LCS meter is cross verified by the energy calculated by inverting system installed in the WTGs. Each feeder has a dedicated set of main and check meter to record frequency quantities of active and reactive energy for energy exported to and imported from the grid during settlement periods. All meters are sealed in the presence of the Maharashtra State Electricity Distribution Company Limited (MSEDCL) (DISCOM) and the Company, with the seal remaining intact unless broken for testing and calibration by a testing laboratory. Measuring instrument accuracy class requirements are 0.2% for kWh measurement of meters, 0.2% for KVAh measurement of meters, and 0.5% for current and voltage transformers. The meter calibration is not under the purview of PP. MSEDCL is the sole authority to conduct the meter calibration.

During onsite visit /36/ the verification team checked all the meters and confirmed that the meters were working satisfactorily. Also, the calibration of meters is completely under purview of Maharashtra State Electricity Distribution Company Limited (MSEDCL) and PP has no control over the same as confirmed through interviews of site personnel /37/ and PPA /23/.

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 Validation and verification manual version 3.2/8/.

The assessment team has verified the JMRs /26/ issued by DISCOM to PP & Invoices/27/issued to DISCOM identified in the PPA /23/ by NSL Wind Power Company (Satara) Pvt. Ltd. confirmed that only the data recorded through main meters is used to calculate net electricity supplied to the grid consequently for ER calculations recorded in ER sheet /2/.

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

GHG Calculations:

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

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

Where:

BE_y	=	Baseline emissions in year y (tCO ₂ e/yr)
$EG_{PJ,y}$	=	Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the VCS project activity in year y (MWh/yr)
$EF_{grid,CM,y}$	=	Combined margin CO ₂ emission factor for grid connected power generation in year y calculated using the latest version of the “Tool to calculate the emission factor for an electricity system” (t CO ₂ /MWh)

Calculation of $EG_{PJ,y}$

The project activity being a greenfield project,

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

Where:

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

And

$$EF_{Co2} = EF_{GridCM,y}$$

EF_{Co2}	=	CO ₂ Emission Factor in year y (tCO ₂ e/MWh)
$EF_{GridCM,y}$	=	Combined margin CO ₂ Emission Factor of Indian Grid (tCO ₂ e/MWh)

Parameter	Unit	Value
EG _{PJ,y}	MWh	28,034
EF _{CO2}	tCO ₂ e	0.9767
BE _y	=	28,034 * 0.9767
	=	27,381 (Round down value)
PE _y (tCO ₂ e)	(tCO ₂ e)	0
LE _y (tCO ₂ e)	(tCO ₂ e)	0
Net GHG emission reductions or removals tCO ₂ e	(tCO ₂ e)	27,381 (tCO ₂ e)

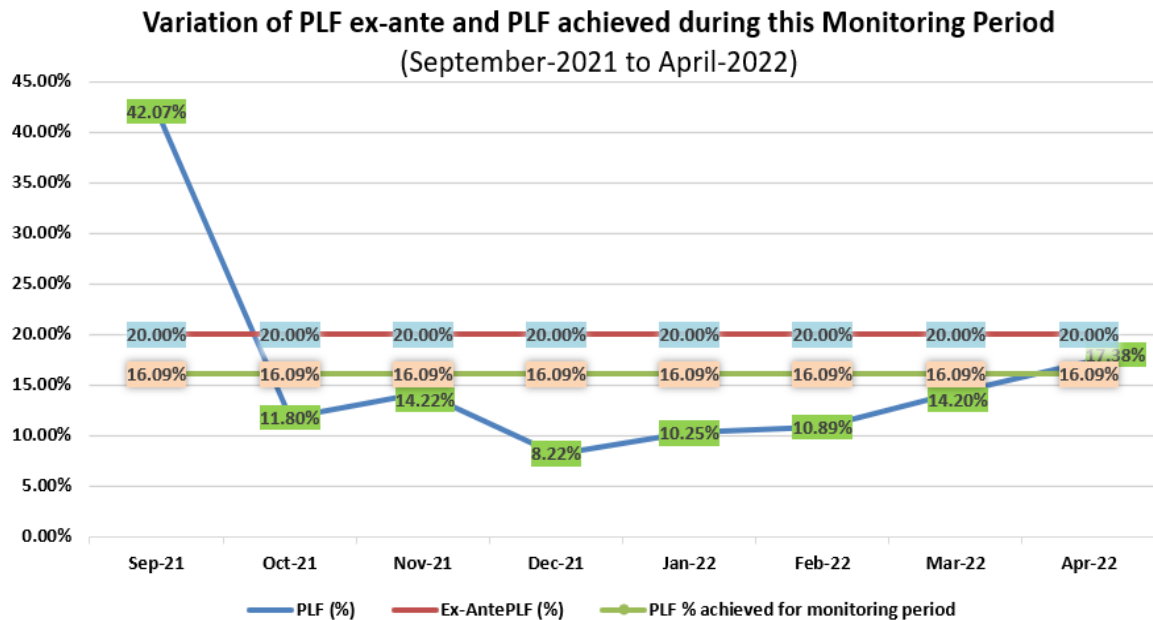
The verification team attests to the correctness of the formulas and methodologies used to compute baseline emissions. The applied default values, emission factors, and assumptions in the calculations are all reasonable. The assumptions, emission factors and default values that were applied in the calculations are justified. The actual emission reduction achieved during the current monitoring period are 19.55% lower than the estimated ERs in the registered PD/3/. We as VKU Assessment/Verification Team accepted this as this is mainly due to the variations in low PLF, low wind speed and major shutdown periods during the monitoring period. The assessment team further performed the analysis of the achieved PLF against the ex-ante PLF for current monitoring period.

Table No: 16 Variation of PLF from ex-ante estimation for current monitoring period 01-September-2021 to 30-April-2022 (Inclusive of both start and end dates)

Monitoring Period	Actual Generation in MWh	As per operating hours in MWh	PLF achieved %	PLF ex ante	% variation	PLF achieved at Project level
Sep-21	9087.54	21600	42.07%	20.00%	110.36%	16.09%
Oct-21	2634.28	22320	11.80%	20.00%	-40.99%	16.09%
Nov-21	3072.53	21600	14.22%	20.00%	-28.88%	16.09%
Dec-21	1834.26	22320	8.22%	20.00%	-58.91%	16.09%
Jan-22	2288.74	22320	10.25%	20.00%	-48.73%	16.09%
Feb-22	2195.56	20160	10.89%	20.00%	-45.55%	16.09%
Mar-22	3168.61	22320	14.20%	20.00%	-29.02%	16.09%
Apr-22	3753.09	21600	17.38%	20.00%	-13.12%	16.09%
Total	28034.60	174240	16.09%	20.00%	-19.55%	16.09%

Since the data available for current monitoring period is from September-2021 to April-2022, assessment team plotted the graph for study the trend.

Figure 03: Trends of PLF from September 2021 to April 2022



Based upon the Figure 03, it is clear that the trend of PLF till September-2021 is higher than the estimated and also after September-2021 the trend of PLF is lower than the estimated. This is reflected in lower emission reductions for the current monitoring period at 19.55%.

The lower generation during the current verification period is hence due low wind flow, grid unavailability, low PLF & high scheduled & unscheduled breakdown as verified and traced through evidences and calculative computation by VKU assessment team during desk review, onsite visit and interview with site personnel confirmed the reasons of lower emissions reduction as compared with registered VCS PD Version 03 dated 08-February-2016/3/ & hence acceptable to VKU.

Hence the 19.55% actual lower emission reduction achieved during the current monitoring period neither affects additionality nor there is any deviation from the registered monitoring plan, which was verified by the VKU Assessment/Verification Team during onsite visit.

The electricity produced by a wind plant relies on the amount of wind passing through it, and changes in wind availability can have an impact on its output. The flow of wind is a natural phenomenon and nobody have control over it, which can, in turn, affect the amount of electricity generated. The fluctuation in the wind flow is not under the control of the project proponent. Hence, it is acceptable to the VKU Assessment/Verification Team.

All the data were made available to the assessment team by PP during site visit/36/ and as supporting evidences which have been monitored as per required monitoring frequency. The

means of verification for the values of parameters, used for baseline emission calculation, is described above.

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

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

4.6 Non-Permanence Risk Analysis

There is no non-permanence risk that could lead to material errors, omissions or misstatements rating determined by the project proponent for the project activity and no risk was identified in the audit/verification plan hence not applicable.

5 VERIFICATION OPINION

VKU Certification Pvt. Ltd. has performed the seventh verification of the fixed crediting period (06-March-2014 to 05-March-2024 which is inclusive of both dates) for the project activity “Satara Wind Power Project in Maharashtra, India.” in India, VCS Registry Project ID 1519, for the monitoring period 01-September-2021 to 30-April-2022 (Inclusive of both start and end dates), with regard to the relevant requirements for VCS activities. The project proponents of the “Satara Wind Power Project in Maharashtra, India.” amounts to 27,381 tCO₂e of carbon dioxide equivalent (tCO₂e). These reported reductions have been assessed in accordance with the relevant requirements outlined in the VCS Standard, version 4.5/07/.

The project proponents of the “Satara Wind Power Project in Maharashtra, India.” project is responsible for:

- The preparation of greenhouses gas emissions data and the reported greenhouse gas emission reductions from the project on the basis set out in the monitoring plan contained in the registered VCS PD version 3.0 of 08-February-2016 /3/
- The development and maintenance of records and reporting procedures in accordance with that plan, including the calculation and determination of greenhouse gas emission reductions of the project.

It is the responsibility of VKU to express an independent verification opinion about the project’s conformity with the requirements of VCS Standard version 4.5/7/ 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 version 3.0 of 08-February-2016 /3/
- The monitoring report and other supporting documents provided are complete and verifiable and in accordance with the applicable VCS Standard version 4.5/7/ requirements;
- The monitoring is in place as per the applied baseline and monitoring methodology;
- The monitoring plan in the registered VCS PD version 3.0 of 08-February-2016 /3/ is as per the applied baseline and monitoring methodology.

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

As per VCS Standard Version 4.5, clause 4.1.23, 4.1.24 and 4.1.25, VKU is of opinion that that GHG emission reduction stated in the monitoring report version 3.1 of 08-September-2023 for

the “Satara Wind Power Project in Maharashtra, India.” in India for the period 01-September-2021 to 30-April-2022 (Inclusive of both start and end dates) *are fairly and correctly stated*.

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

Opinion	Final Documents	Monitoring Period	Emission Reductions achieved	Remarks
☒ Positive opinion ☐ Negative Opinion	Monitoring Report Version 3.1 dated 08-September-2023 Emission Reduction Sheet Version 2.0 of 27-September-2022	01-September-2021 to 30-April-2022 (Inclusive of both the days)	27,381 tCO_{2e}	The GHG emission reductions are calculated on the basis of approved methodology ACM0002: Grid-connected electricity generation from renewable sources --- Version /10/ and the monitoring plan included in the registered VCS PD /3/ Hence VKU is able to certify that the emission reduction from the project during the monitoring period 01-September-2021 to 30-April-2022 (Inclusive of both start and end dates) amounts to 27,381 tCO_{2e} is in line with the applicable VCS requirements set out in section 3.15 of VCS Standard version 4.5/08/ and that the verification of the GHG statement was

				conducted in accordance with ISO 14064-3; 2019.
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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)
Vintage 2021 (01- September-2021 to 31-December-2021)	16,241	0	0	16,241
Vintage 2022 (01-January-2022 to 30-April-2022)	11,140	0	0	11,140
Total	27,381	0	0	27,381

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

Year	Ex-ante emissions reductions/removals	Achieved emissions reductions/removals	Percent difference	Justification for the difference
Verification period: 01-September-2021 to 30-April-2022 (Inclusive of both start and end dates)	34,036	27,381	-19.55%	The actual Emission Reductions (ER) achieved during the monitoring period are lower than the originally estimated ER. This discrepancy is primarily attributed to a lower Plant Load Factor (PLF) experienced during the current monitoring period. Unforeseen factors such as wind unavailability and routine maintenance led to unexpected downtime, resulting in a reduced overall PLF for the period, which in turn impacted the expected emissions reductions.

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
PPA	Energy Wheeling Agreement
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
MSEDCL	Maharashtra State Electricity Distribution Company Limited
NGO	Non-governmental Organization
ODA	Official Development Assistance
PD	Project Design Document
PE	Project Emission
PP(s)	Project Proponent(s)

PPA	Power Wheeling Agreement
PSA	Power Sale Agreement
Ref.	Document Reference
SLDC	State Load Dispatch Centre
SS(s)	Sectoral Scope(s)
TA(s)	Technical Area(s)
UNFCCC	United Nations Framework Convention on Climate Change
VCU	Verified Carbon Unit
VKU	VKU Certification Ltd.
VVS	Validation and Verification Standard

APPENDIX B: AUDIT FINDINGS

CAR: Corrective Action Request_03

CL: Clarification Request_04

FAR: Forward Action Request_00

Type	Date	24-August-2022
CL#01	Reference	Section of Ver protocol: 1/DR & section 2/DR
Description of the Non Conformance		
1. PP is requested to submit the commissioning certificates/PPA to the VVB for verification in section 1.1 2. PP is requested to specify the nature of crediting period along with justification in section 1.6 3. PP is requested to submit the Single Line diagram showing the project boundary 4. PP is requested to submit the declaration document to verify that the project not registered under any other GHG program during the current monitoring period in section 1.9 5. PP is requested to submit the supporting documents to verify that there is no double counting of emission reduction in section 1.10. 6. PP is requested to provide the supporting documents to verify the direct employment of more than 10 people during current monitoring period.		
1 st Response from PP	Date	28-September-2022
1. PP has submitted the commissioning certificates for the project activity 2. The section 1.6 has been updated 3. A single line diagram has been included that shows the project boundary in line with the registered project boundary 4. The required declaration copy has been submitted to VVB 5. The declaration copy submitted to VVB also clarifies no double accounting of ERs. 6. PP has already submitted the project site attendance sheet and employee training records. This serves the evidence of employment. Also, during the site visit audit VVB was accessible to interact with the local employees as well as the managing staff which are the direct beneficiaries under SDG 8.5.1 Attached: Revised MR version 02, dated 27 Sep 2022		
1 st Assessment by Audit Team	Status	Open
	Date	20-October-2022
1. PP has not yet submitted the commissioning certificates/PPA to the VVB. #Open 2. As per registered VCS PD dated 08/02/2016, crediting period is mentioned as Fixed. Kindly clarify. #Open 2.1 As PP has opted for renewal crediting period for 10 years, but as per VCS standard 4.3, for non-AFLOU project RCP allowed is 7 years twice renewable. Please clarify how this is consistent with the clause 3.8.1 of the VCS standard 4.3. #Open 2.2 PP is also required to justify in the MR about the number of crediting & monitoring		

period, section 1.6 of MR. #Open				
3. PP to please incorporate the SLD in section 4.3 of the MR as per VCS guidelines to fill MR template version 4.1 #open				
4. PP to submit declaration that claiming that project has not been applied under any other GHG program neither included in any emissions trading program or any other mechanism that includes GHG allowance trading, section 1.10 & 1.11 of MR #Open				
5. PP is requested to submit the declaration to the VVB confirming there is no credit received or claimed for this monitoring period and that PP has not yet submitted the to VVB. #Open				
6. VVB interacted with local employees and managing staff during onsite visit, but PP has not submitted employee training records PP is requested to submit as a part of documentary evidence in section Table 1 of MR. #Open				
7. Please submit the REC mechanism certificate as per VCS guidance to fill MR version 4.1 undertaking that no credit has been claimed for the current monitoring period, section 1.9 of MR. #Open				
2 nd Response from PP			Date	03-March-2023
1. PP would like reconfirm that the Commissioning Certificates and PPA copies were uploaded to the existing supporting document folder.				
2. PP would like to clarify that this is registered project which was registered before the VCS standard 4 and subsequent versions are launched. During the older versions, the project crediting period for non-AFOLU projects is considered as 10 years which was allowed for renewal for another 10 years. However, at present such renewal is restricted and renewal window is already closed. Hence the requirement of VCS Standard V4.3 is not applicable to this section 1.6 of the MR.				
3. The SLD for the project activity has been included under the section 4.3 of the MR.				
4. The required declaration has been now submitted. Please find the documents under the supporting document folder link submitted to VVB.				
5. The required declaration has been now submitted. Please find the documents under the supporting document folder link submitted to VVB.				
6. The required employee training records are submitted Please find the documents under the supporting document folder link submitted to VVB.				
7. PP has already clarified under the above declarations that no other environmental mechanisms or credits are considered for the project. Thus, REC is also not applicable for the project activity.				
Also, as per the latest VCS MR version, 4.2 the MR version 03 has been further updated and is submitted herewith.				
2 nd Assessment by Audit Team		Status	Closed	Date
				14-April-2023
1. PP has submitted the commissioning certificates/PPA to the VVB. #Closed				
2. PP has clarified that the project activity adopts for fixed crediting period for 10 years, and same has also mentioned in section 1.6 of MR and found consistent with VCS PD dated 08/02/2016 #Closed				
2.1 PP has mentioned the number of crediting & monitoring period, section 1.6 of MR. # Closed				
3. PP has incorporated the SLD in section 4.3 of the MR as per VCS guidelines to fill MR template version 4.1 #Closed				
4. PP has submitted the declaration that project has not been claiming or applied under any other GHG program neither included in any emissions trading program or any other mechanism that includes GHG allowance trading, section 1.10 & 1.11 of MR				

#Closed
5. PP has submitted the declaration to the VVB confirming that there is no credit received or claimed for this monitoring period as verified by the assessment team. # Closed
6. PP has submitted the training records to the VVB and found consistent with the information collected by assessment team during onsite visit. # Closed
7. PP has clarified under the declarations that no other environmental mechanisms or credits are considered for the project. Thus, REC is also not applicable for the project activity, as verified by the assessment team. # Closed
Hence VKU's assessment team confirms that CL#01 closed

Type	Date	24-August-2022
CL#02	Reference	Section of Ver protocol:3/D R section 4/DR& section 5/DR
Description of the Non Conformance		
1. PP is requested to submit a copy of grievance register to verify the stakeholder consultation in section 2.2 2. PP is requested to explain the non-applicability of the section 3.2.2 in MR 3. PP is requested to provide (JMR), invoices, credit notes to the VVB for verification. 4. PP is requested to add breakdown details of the project during current monitoring period in the Monitoring Report. Also please help share some pictures of the same from the Logbook 5. PP is requested to submit the calibration certificates to the VVB for verification.		
1stResponse from PP	Date	28-September-2022
1. The copy of the pages of the grievance register has been submitted to VVB, also during the onsite visit grievance register copy was accessed by the audit team. 2. The required justification is now included. 3. The copies of the JMR, invoices, credits note etc. submitted to VVB pertaining to the current Monitoring Period 4. The shut down and breakdown details are submitted to VVB, also witnessed in the site specific records during the on-site visit, 5. All calibration certificates submitted to VVB.		
1stAssessment by Audit Team	Status	Open
	Date	22-October-2022
1.Assessment team reviewed the register during onsite visit, but PP has yet not submitted the photographs to the VVB as a part of documentary evidence. #Open 2.PP has included justification in Section 3.2.2. Hence accepted. #Closed 3.VVB has not yet received JMRs, Invoices, credit notes. #Open 4. Although, witnessed by VVB during the onsite visit, PP is requested to submit and add the breakdown details in the MR #Open 5.PP is requested to submit calibration certificates to VVB #Open		

2 nd Response from PP			Date	03-March-2023	
1. The photos of the grievance register are uploaded into the same link submitted to VVB for supporting documents 2. Not applicable. 3. All Credit notes with JMRs and invoices are uploaded into the same link submitted to VVB for supporting documents 4. Required breakdown details are uploaded into the same link submitted to VVB for supporting documents. A summary table is now added into the MR. 5. The required calibration certificates are uploaded into the same link submitted to VVB for supporting documents. Also, as per the latest VCS MR version, 4.2 the MR version 03 has been further updated and is submitted herewith.					
2 nd Assessment by Audit Team		Status	Closed	Date	14-April-2023
1. PP has submitted the photographs to the VVB and found consistent. #Closed 3. PP has submitted the JMRs, Invoices, credit notes to the VVB and found consistent. #Closed 4. PP has submitted the breakdown details to the VVB and also incorporated the same in MR. #Closed 5. PP has submitted calibration certificates to VVB #Closed Hence VKU's assessment team confirms that CL#02 closed					

Type	Date	22-October-2022
CL#03	Reference	Section of Ver protocol:2.1,3.1
Description of the Non Conformance		
1. PP is requested to share supporting documents where project activity helps in employment generation. 2. There is a significant difference between the ex-ante and actual GHG emission reductions. Kindly clarify whether there was a change /any other event resulting to decrease in the emission reductions from the project activity, section 3 of MR. 3. PP is requested to share the "Operation and Maintenance" contract with the supplier. 4. PP to specify if the meter calibration done under purview of MSEDCL is performed by a NABL accredited laboratory.		
1stResponse from PP	Date	11-November-2022
1. For the purpose of employment generation, PP has submitted the copies of attendance sheets recorded at project site for each employee. 2. The difference (lower emission) in ER values as compared to the ex-ante estimate is due to lower generation and shut down events. Thus, there is no other specific reason or		

- concerns in the project. The shutdown details are submitted to VVB.
3. The O&M contract copy is submitted.
 4. Yes, meter calibrations are done under the purview of MSEDCL and via NABL accredited lab.

Also, as per the latest VCS MR version, 4.2 the MR version 03 has been further updated and is submitted herewith.

1stAssessment by Audit Team	Status	Closed	Date	22-October-2022
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1. PP has submitted the copies of attendance sheets recorded at project site for each employee as verified by the assessment team. #Closed
2. PP has provided the sufficient justification for difference between the ex-ante and actual GHG emission reductions and same has incorporated in section 3 of MR as verified by the assessment team. #Closed
3. PP has submitted the "Operation and Maintenance" contract with the supplier i.e., ReGen Power Tech Private Limited. #Closed
4. PP has specified that the meter calibration done under purview of MSEDCL and performed by a NABL accredited laboratory. PP has also submitted the calibration records as verified by the assessment team. #Closed

Hence VKU's assessment team confirms that CL#03 closed

Type	Date	06-September-2023
CL#04	Reference	Section of Ver protocol: 01 Section of Ver protocol: 03 Section of Ver protocol: 04

Description of the Non Conformance

1. As per MR template, "Document total project contributions since the project start date, previous SD contribution monitoring period, or VCS monitoring period in the "Current Project Contributions" column and the cumulative contributions over the project lifetime in the "Contributions Over the Project Lifetime" column in Table 1 below. The cumulative impact should be calculated by summing the current project contributions with all impacts included in previously approved VCS monitoring reports or Sustainable Development Contribution Reports."
2. PP to provide specifications of the transformers, voltage at the hub, number of feeders at the substation, distance of WTG (nearest) from the substation, LCS metering system (as it is a monitoring parameter). OPEN.
3. Please express the breakdown hours as a %age of total available hours of operation.
4. Are the readings taken jointly like the one at the sub-station?
5. In the diagram PP is requested to demarcate the plant boundary and project boundary, show the metering points and the attendant parameter measured by the metering points.
6. During the times when the monitoring period dates do not match with the JMR or invoice date, how is the ER calculation performed.

1 st Response from PP	Date	08-September-2023
1. As per the VCS Standard Version 4.5 Page no 79, Appendix 03: Document History and Effective dates, For V4.2, serial number 04 states that “it is required by project proponents to demonstrate contributions to a minimum of three SDGs in all monitoring reports verified after the effective date. Effective immediately for all projects that request registration on or after 20-January-2023. Projects that request registration before 20-January-2023 shall demonstrate contributions to at least three SDGs by 20-January-2025”. This is project's seventh periodic verification of fixed crediting period for the Monitoring Period 01-September-2021 to 30-April-2022 (Inclusive of both start and end dates), Since this project is registered before 20-January-2023, so the Project Proponent (PP) must demonstrate contributions to at least three SDGs by 20-January-2025. 2. Specifications of the transformers Answer: WTG – 1700 KV 33KV/620V Substation – 100MVA 220/33 KV Voltage at the Hub, Answer: 620 Volt Number of feeders at the sub-station Answer: Total -8 feeders NSL (Satara) – 3 Feeders Distance of WTG (nearest) from the sub-station, Answer: 12 KM LCS metering system (as it is a monitoring parameter). Answer: Through SCADA system connected at site CMS/office. (8609.6/116160) *100 = Breakdown is 7.4% of total available hours of operation. 3. Yes, the readings taken jointly like the one at the Grid sub-station named Hiwarwadi. 4. SLD is now revised and made consistent with the PD 5. Mismatch in Monitoring Period and the Billing Period; In case the dates of a particular monitoring period do not match with the dates of the billing period, the net electricity exported to the grid would be calculated from: $D = (A/B) \times C$ Where, A= Difference of number of days which are not matching of billing period and monitoring period. B=Number of days of the billing period/month which was not matched with the monitoring period. C= Net electricity supplied to the grid for that given billing period/month The calculated value after apportioning would be used for calculation of emission reductions during that period		
1 st Assessment by Audit Team	Status	Closed Date 08-September-2023

1. Assessment Team confirms that PP has explained the projects cumulative contribution w.r.t. to VCS standard version 4.5, hence acceptable.
2. Assessment Team confirms that PP has provided the required details of the transformers and Grid Substation for which VVB has included a SLD in section 4.1 of FVR which was witnessed during site visit.
3. Assessment Team confirms that PP has confirmed that measurements for Export and Import is taken jointly at Hiwardwadi Grid Substation.
4. Assessment Team confirms that PP has added a SLD in MR section 4.3 consistent with the registered PD
5. Assessment Team confirms that PP has provided details for Mismatch in in Monitoring Period and the Billing Period while estimating ERs

Hence VKU's assessment team confirms that CL#04 is closed

Type	Date	24-August-2022
CAR#01	Reference	Section of Ver protocol: Section 1/DR , Section 2 & 4/DR
Description of the Non Conformance		
1. PP is requested to update the Monitoring Report as per Latest Monitoring Report Template Version 4.1. 2. PP is requested to provide working hyperlink in the footnote in section 1.1 3. Please update the following as per VCS MR Template version- Contents table, section 1.3 ,1.4, and 1.8, section 2 and section 4 (Font to be used Franklin Gothic Book/Arial Size: 10.5) Also please justify the monitoring report		
1 st Response from PP	Date	28-September-2022
1. The MR has been updated as per latest template version 4.1 2. The active hyperlink now included under the section 1.1 3. The font type and size used in the MR has been now changed and updated in line with the MR template.		
1 st Assessment by Audit Team	Status	Open
Date	22-October-2022	
1.MR has been updated by the PP. Hence, accepted #Closed 2. PP is requested to provide weblink of the VCS Project Webpage which is required for reference purpose. Kindly add the same. #Open 3.PP has not updated Font size as per MR Template filling guidelines. PP is requested to maintain consistency for Font used throughout the report. As per VCS MR Template version 4.1, please complete all sections using Arial or Franklin Gothic Book 10.5 point, black, regular (non-italic) #Open		
2 nd Response from PP	Date	03-March-2023

1. The weblink has been now revised appropriately.
2. The formatting consistency is now maintained.

Also, as per the latest VCS MR version, 4.2 the MR version 03 has been further updated and is submitted herewith.

2nd Assessment by Audit Team	Status	Closed	Date	14-April-2023
1. PP has provided weblink of the VCS Project Webpage, as verified by the assessment team #Closed 3. PP has updated Font size as per MR Template filling guidelines and found consistent, as verified by the assessment team# Closed Hence VKU's assessment team confirms that CAR#01 closed				

Type	Date	24-August-2022		
CAR#02	Reference	Section of Ver protocol: Section 1/DR. 4 MR& 5/DR		
Description of the Non Conformance				
1. PP is requested update the row number in table 1 in provided MR (section 1.11) 2. PP is requested to update the typing error in given MR (section 4) 3. PP is requested to provide the web link for the verification of CEA database version in section 4.1 of MR 4. PP is requested to mention the value that how much actual reduction is there as compared to PD estimated ER. 5. PP is requested to provide the clarification for leaving the blank page (section 5.4)				
1 st Response from PP	Date	28-September-2022		
1. The required corrections are now amended under the section 1.11 2. The typo errors are now corrected 3. The CEA database weblink has been now updated. Earlier link was invalid due to change in particular web address at CEA. 4. The comparison of actual and ex-ante emission reductions are calculated and demonstrated under the ER sheet. A summary table is now also included under the MR with the reason statement 5. It was due to formatting error, the blank page is now removed.				
1 st Assessment by Audit Team	Status	Closed	Date	22-October-2022
1. 1.PP has updated row number in Section 1.11 of MR. Hence, accepted. 2. 2.PP has updated typing errors in Section 4 of MR. Hence, accepted 3. The CEA database weblink has been now updated. Hence, accepted. 4. PP has successfully updated the comparison of actual and ex-ante emission reductions in MR. 5. 5.PP has removed the blank page. Hence, accepted				

Hence VKU's assessment team confirms that CAR#02 closed

Type	Date	24-August-2022
CAR#03	Reference	Section of Ver protocol: ER sheet/DR
Description of the Non Conformance		
1. PP is requested to provide the supporting documents such as Joint Meter Readings (JMR), credit notes/monthly statements, calibration certificates and invoices raised on MSEDCL by PP to verify the value of various parameters mentioned in section 4 of provided MR and entire ER Sheet. 2. PP is requested to correct the Monitoring period End date in the ER sheet as it is found inconsistent with the MR. Please update the days as per the correction and also update the calculation accordingly.		
1 st Response from PP	Date	28-September-2022
1. All required supporting documents related to the current MP have been submitted via online link. The same is now resubmitted. 2. The MP end date is now made consistent across all the documents. The required corrections are now made in the ER sheet and same is further addressed under the MR as ER comparison summary.		
1 st Assessment by Audit Team	Status	Open
Date	22-October-2022	
1. Assessment team has yet not received the JMRs and Invoices. PP is requested to send. #Open 2. PP has not corrected and made the dates consistent throughout all documents. #Open 3. PP has submitted meter replacement certificates issued by state entity but has not mentioned about meter replacement in anywhere throughout the MR. 4. As per VCS MR guidelines version 4.1 section 5.4 PP to provide sufficient explanation of the potential causes for the difference in actual versus estimated GHG ERRs. 5. Dates mentioned here and in the meter replacement certificates submitted by PP are not consistent. PP to submit calibration certificates to the VVB.		
2 nd Response from PP	Date	03-March-2023
1. All the supporting docs are now again uploaded into the same link submitted to VVB. 2. The inconsistency in dates is now removed. 3. The details of meter replacement are now amended. 4. The section 5.4 of the MR is now updated. 5. The required meter calibration certificates are uploaded into the same link which was submitted to VVB for supporting documents. Also, as per the latest VCS MR version, 4.2 the MR version 03 has been further updated and is submitted herewith.		

2nd Assessment by Audit Team	Status	Closed	Date	14-April-2023
1. PP has submitted the JMRs, Invoices, credit notes to the VVB and found consistent. #Closed 2. PP has corrected the dates and made consistent throughout all documents, As verified by the assessment team# Closed 3. PP has submitted meter replacement certificates issued by state entity and same has been also mentioned about meter replacement in the MR.# Closed 4. PP has provided sufficient explanation of the potential causes i.e., low wind, Higher PLF and some breakdowns for the difference in actual versus estimated GHG ERs.# Closed 5. PP has updated the MR and now meter replacement dates are found consistent with the certificates submitted by PP, as verified by the assessment team # Closed Hence VKU's assessment team confirms that CAR#03 closed				

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

APPENDIX C: COMPETENCE STATEMENT

Team Leader



Certification Pvt. Ltd.

VKU.F50W. Competence Statement

COMPETENCE STATEMENT

Name	Abhishek Kumar Srivastava
Nationality	India
Countries of Experience	India, Uganda
Education Qualification	M. Tech- Energy Management M. Sc. -Physics
Year of Experience	14 Years
Area of Expertise	Climate Change & Environment / Industry
Eligible Sectoral Scope	1. GHG emission reductions from fuel combustion

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, 3.1.)	YES
Financial Expert	YES

Reviewed by	Vandana Gupta (Quality Manager)	Date	25/02/2023
Approved by	Vivek Kumar Ahirwar (Technical Manager)	Date	25/02/2023

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

Roles

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

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