



51 MW WIND POWER PROJECT AT CHITRADURGA

Document Prepared By



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Project Title	51 MW Wind Power Project at Chitradurga
Version	1.1
Report ID	VKU.VER.02.22_VCS_706

Report Title	51 MW Wind Power Project at Chitradurga
Client	WeAct Pty Ltd
Pages	77
Date of Issue	28-September-2023
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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 **“51 MW Wind Power Project at Chitradurga” (VCS ID 706)** in India. This is the fifth verification of second crediting period and overall, eleventh periodic verification of the project activity. The monitoring period is from **01-September-2021 to 30-April-2022 (Inclusive of both start and end dates)** under second crediting period from **06-June-2018 to 05-June-2028 (Inclusive of both dates)**.

The purpose of the verification: The objective of the verification process is to obtain an impartial evaluation of the ex-post determination of the monitored reductions in greenhouse gas (GHG) emission. This verification ensures that the monitoring methodology aligns with the plan outlined in the registered VCS Joint PD&MR /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 Joint PD & MR /3/.
- To evaluate the project's adherence to relevant regulations, including the legislation of the host country (India).
- To verify the implementation and functionality of the monitoring system, ensuring the generation of Verified Carbon Units without any instances of double counting.
- To verify the accuracy, completeness, consistency, transparency, and absence of significant errors or omissions in the reported data by examining monitoring records and emissions reduction calculations.
- To ensure that the actual monitoring systems and procedures align with those described in the monitoring plan.
- To assess the GHG emission reduction data and provide a conclusion with a reasonable level of assurance regarding the absence of material misstatements.
- To verify that reported GHG emission data is sufficiently supported by evidence.

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

The verification process included *inter alia* a desk review, on-site assessment and the resolution of 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 fifth verification of second crediting period, it is to note that as a result, a total of **Seven (07)** findings were identified, comprising **four (04) Corrective Action Request (CARs); three (03) 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. Consolidated baseline methodology for grid connected electricity generation from renewable sources - Version 19 /13/ and Tool to calculate the emission factor for an electricity system; Version 07.0/19/ and the monitoring plan included in the registered VCS Joint PD & MR (version 03) dated 05-February-2019/3/

Verification Conclusion:

Based on VKU's thorough assessment, it is their professional judgment that the project activity “51 MW Wind Power Project at Chitradurga.” (VCS ID 706) fully complies with the applicable requirements of VCS standard version 4.5 /10/ and associated guidelines. The project has successfully implemented the designated baseline and monitoring methodology outlined in ACM0002. Consolidated baseline methodology for grid connected electricity generation from renewable sources - Version 19 /13/.

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 **24,802 tCO₂e** during the fifth verification of second crediting period (06-June-2018 to 05-June-2028; Including both dates) and overall, eleventh periodic verification of the project activity for monitoring period, which spans from **01-September-2021 to 30-April-2022 (Inclusive of both start and end 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 VKU Certification (here after referred as VKU) to carry out fifth verification of the project “51 MW Wind Power Project at Chitradurga” (VCS ID 706) project in India for the period from 01-September-2021 to 30-April-2022 (Inclusive of both start and end dates) under second crediting period from 06-June-2018 to 05-June-2028 (Inclusive of both dates).

The objective of the verification is to have an independent evaluation of a project activity by an accredited validation and verification body against the requirements of the VCS Program Guide Version 4.4 /8/, VCS standard version 4.5 /10/ and GHG program applied, on the basis of the registered VCS Joint PD & MR Version 03 dated 05-February-2019/3/.

This is the 5th verification of **second crediting period (06-June-2018 to 05-June-2028)**, (Inclusive of both dates) for a period of eight months or 242 days i.e., from 01-September-2021 to 30-April-2022 (Inclusive of both start and end dates). The project activity adopts renewable crediting period of 10 years period as mentioned in section 1.6 of VCS Joint PD & MR Version 03 dated 05-February-2019/3/.

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

2nd Crediting Period Audit Trail			
Audit Type	GHG Programme	Monitoring Period (Inclusive of both dates)	Number of years
Joint Validation and 1 st Verification	VCS	<u>06-June-2018 to 30-September-2018</u>	03 Months 25 Days
2 nd Verification	VCS	<u>01-October-2018 to 31-October-2019</u>	01 Years 01 Months
3 th Verification	VCS	<u>01-November-2019 to 31-October-2020</u>	01 Years
4 th Verification	VCS	<u>01-November-2020 to 31-August-2021</u>	10 Months
5 th Verification (Current Monitoring Period)	VCS	01-September-2021 to 30-April-2022	08 Months

Total	VCS	—	03 Years 10 Months 25 Days
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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 Joint PD & MR Version 03 dated 05-February-2019 /3/ & MR /1/. Furthermore, all essential physical aspects (technology employed, technical specifications of the WTGs, project equipment's, metering and monitoring protocols) of the project have been diligently implemented.
- 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. Consolidated baseline methodology for grid connected electricity generation from renewable sources - Version 19 /13/ and approved monitoring plan.

The verification process aimed to confirm the seamless implementation and full functionality of the monitoring system, ensuring the accurate generation of Verified Carbon Units (VCUs) without any instances of double counting/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 “51 MW Wind Power Project at Chitradurga”. The verification of this project was based on the validated & registered VCS Joint PD & MR Version 03 dated 05-February-2019/3/ & 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:

- VCS Programme Guide (Version 4.4) /8/
- VCS Standard (Version 4.5) /10/
- VCS Program Definitions (Version 4.4) /6/
- VCS Registration & Issuance Process (Version 4.4) /7/
- VCS validation and verification manual version 3.2/11/
- CDM Approved methodology ACM0002 Version 19.0 /13/
- Tool to calculate the emission factor for an electricity system (Version 07.0)/20/
- Tool for the demonstration and assessment of additionality, Version 07.0/21/

ix) CDM Validation and Verification Standard version 3.0/12/

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 & Monitoring Report, registered under (Version 03) dated 05-February-2019/3/ 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.

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 4.5/10/.

The verification report is based on the Monitoring report/1/, registered VCS Joint PD & MR Version 03 dated 05-February-2019/3/ & supporting documents that were made available to the VKU's assessment team (24//25//26//27//28//29/30//31//32/33/) references in table-04 and information collected through performing interviews with PP Representatives/Local Stakeholders during on-site visit /36/

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 is a Wind Power Generation project of total capacity 50.4 MW, installed and currently operational at Bhimasamudra site in Chikkandavadi and Kallavanagathihalli village, Chitradurga District of Karnataka in India. The project activity has been connected to Unified Indian Grid (previously it was as Southern Grid) through sub-stations owned and maintained by the state electricity utility (BESCOM/KPTCL).

Nuziveedu Seeds Limited applied for a change to its corporate structure, transitioning to a private company under the provisions of Section 31(1) of the Companies Act, 2013. The Central Government granted approval for this change, renaming the company as "Nuziveedu Seeds Private Limited" on 26-June-2008. Later, on 16-June-2010, the Central Government approved another name change, rebranding it as "NSL Renewable Power Private Limited," in accordance with Section 21 of the Companies Act.

Difference in project title capacity (51MW) and actual installed capacity of project (50.4 MW):

On 10-December-2007, NSL issued a purchase order to Regen Power Private Limited (RPPL) for the supply of 34 Wind Turbine Generators (WTGs), each with a capacity of 1.5 MW, totalling 51 MW. RPPL delivered 9 WTGs on schedule but could only provide 19 out of the remaining 25 WTGs, notifying NSL on 12-September-2009, that the balance 6 WTGs would be delayed until after June 2010. In response to RPPL's delay, NSL opted to substitute 6 of the Regen WTGs with 4 WTGs from Suzlon, each with a capacity of 2.1 MW. Consequently, NSL placed a new purchase order with Suzlon Energy Limited (SEL) for these 4 WTGs. As a result, the current

capacity stands at 50.4 MW, which is lower than the capacity mentioned in the title. PP is also developing the project under CDM¹ and received HCA with the same title. PP is using the same title for consistency between their CDM and VCS project. Hence VKU confirms that from the previous validation and verification reports and registered and approve PD/3/ that the project has lower actual installed capacity of 50.4 MW than the titled 51MW (proposed) and for emission reduction calculation only 50.4 MW capacity has been considered. Henceforth in VKU's opinion this would not lead to any overestimation of either baseline or the emission reductions.

The Project WTGs are currently operational and had successfully completed 10 years of first crediting period under VCS (first crediting period was from 06-June-2018 to 05-June-2018) and is functioning successfully since then and dates at Bhimasamudra site in Chikkandavadi and Kallavanagathihalli village, Chitradurga District of Karnataka in India are verified against registered VCS Project Description version 03 dated 08-February-2014/3/ and commissioning certificates/29/. The first machine under the project activity was commissioned on 06-June-2008 and last machine under the project activity was commissioned on 30-September-2011. The expected operational lifetime of the project is minimum of 20 years.

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 4.5/10/ it is an obligation for the project proponent to make available to the validation/verification body the required supporting documents.

Hence VKU in adherence to the section 3.1, clause 3.1.8 of the VCS Standard version 4.5/10/ conforms that the capacity of the project 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./13/

Start date of this project activity is earliest date of commissioning of the 1st machine (WTG) of project activity i.e., on 06-June-2008 and the project was fully commissioned on date of commissioning of last machine (32nd WTG) i.e., 30-September-2011. The entire project is in continuous operation since its date of commissioning of the respective machines.

¹ <https://cdm.unfccc.int/Projects/Validation/DB/69J8TNRR5CNV4D9LWCAG623YGGZQ03F/view.html>

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

Baseline/Source	Generation of electricity by fossil fuel- dominated grid connected power plants
Project Equipment/Sink	The avoidance of GHG emission into the atmosphere is due to generation of electricity by renewable means i.e., Wind Turbine Generators of this project and exporting to Unified Indian Grid which is in line with 3.1.1 of ISO:14064 part -2
Baseline GHG emission source reduced/avoided	CO ₂ emissions from fossil fuels and other fuel fired grid connected plants/projects.

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/B-forms/26/ issued by BESCO (Bangalore Electricity Supply Company Limited) and Invoices raised by PP to BESCO (Bangalore Electricity Supply Company Limited) /27/ and, last verification report/05/ 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 (5th monitoring period) of 01-September-2021 to 30-April-2022 (inclusive of both the dates) is 26,176.837 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 24,802 tCO₂e.

2 VERIFICATION PROCESS

The registered VCS project “51 MW Wind Power Project at Chitradurga” (VCS ID 706) is undergoing fifth periodic verification of second crediting period and overall eleventh verification under VCS with VKU Certification Pvt Ltd from 01-September-2021 to 30-April-2022, both dates included. The second crediting period from 06-June-2018 to 05-June-2028 (both dates included)

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

2.1 Method and Criteria

Verification was conducted using VKU’s procedures in line with the requirements specified in the VCS Requirements, i.e., VCS Program Guide Version 4.4 /8/, VCS standard document version 4.5 /10/. The project activity does not fall under category “grouped projects”, hence no sampling methods was employed by the assessment team and during onsite visit /35/ 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 19.0 /13/
- Sectoral Scope: 01 - Energy Industries (renewable /non-renewable sources)
- Project type: Type I - Renewable energy projects
- This is not a grouped and also a non-AFOLU project.

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

- Tool to calculate the emission factor for an electricity system, Version 07.0.0 /20/

Keeping in line with ISO (14064-3; 2019, clause 06 & 14065-2020, clause 09) Standard guidelines assessment team has framed down the process for completing the verification and has followed the same throughout the execution of audit of the said project VCS 706.

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. The results of the strategic analysis shall be used in the risk assessment.

- 3 **Risk Assessment;** Assessment team performed risk assessment of the GHG statement to identify the risk of a material misstatement or nonconformity with the criteria.
- 4 **Evidence Gathering Activities;** Using a risk-based approach assessment team prepared evidence gathering activities, to collect sufficient and appropriate evidence upon which 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.02.22_VCS_706 /40/.
- 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 “51 MW Wind Power Project at Chitradurga.” version 1.0 of 09-May-2022, Version 2.0 of 27-September-2022, Version 3.0 of 12-September-2023 & **final Version 3.1 of 28-September-2023/1/** and the emission reduction calculations spreadsheet version 1.0 of 09-May-2022, Version 2.0 of 27-September-2022 and **final Version 3.0 of 12-September-2023 /2/** were assessed as part of the verification. In addition, the registered VCS Joint Project Description and Monitoring Report- version 03 dated 05-February-2019/3/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 4.5/10/ it is an obligation for the project proponent to make available to the assessment team the required supporting documents and data needed to support statements and data as documented in the monitoring report. Thus, the assessment team reviewed the following documents during verification:

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

Current Verification Reference Documents	
/1/	M/s. NSL Renewable Power Private Limited: VCS monitoring report for “51 MW Wind Power Project at Chitradurga.” In India, • Version 1.0 of 09-May-2022 • Version 2.0 of 27-September-2022 • Version 3.0 of 12-September-2022 • Version 3.1 of 28-September-2023
/2/	M/s. NSL Renewable Power Private Limited: Emission Reduction Calculation Spreadsheet, • Version 1.0 of 09-May-2022 • Version 2.0 of 27-September-2022 • Version 3.0 of 12-September-2023
Background Documents/Weblinks	
/3/	<u>Registered VCS Joint PD & MR- for the project '51 MW WIND POWER PROJECT AT CHITRADURGA.' Version 03 dated 05-February-2019</u>
/4/	<u>LGAI Technological Center, S.A (Applus+ Certification): VCS Joint Validation and verification- Report: 51 MW Wind Power Project at Chitradurga., Version 01, dated 10-February-2016</u>
/5/	<u>LGAI Technological Center, S.A (Applus+ Certification): Verification Report: 51 MW Wind Power Project at Chitradurga., Version 02, dated 22-November-2021</u>
/6/	<u>VCS program Definitions (Version 4.4) of 29-August-2023</u>
/7/	<u>VCS Registration & Issuance Process (Version 4.4) of 31-August-2023</u>
/8/	<u>VCS: VCS Program Guide, version 4.4 of 29-August-2023</u>
/9/	<u>VCS Standard, version 4.4 dated 17-January-2023</u>
/10/	<u>VCS: VCS Standard, version 4.5 of 29-August-2023 (Latest)</u>
/11/	<u>Validation and verification manual version 3.2 dated 19-October-2016</u>
/12/	<u>CDM Validation and Verification Standard version 3.0 dated 09-September-2021</u>
/13/	<u>CDM Executive Board: Baseline and Monitoring Methodology “ACM0002: Grid-connected electricity generation from renewable sources- version 19.0</u>

/14/	<u>VERRA: Project search</u>
/15/	<u>UNFCCC: Project search</u>
/16/	<u>Renewable Energy Certificate Registry of INDIA – Registered RE Generator List (recregistryindia.nic.in)</u>
/17/	<u>I-REC Standard – The International REC Standard Foundation (irecstandard.org)</u>
/18/	<u>Gold Standard Foundation</u>
/19/	<u>EIA NOTIFICATION dated 14-September-2006</u>
/20/	<u>Tool to calculate the emission factor for an electricity system, Version 07.0</u>
/21/	<u>Tool for the demonstration and assessment of additionality, Version 07.0.0</u>
/22/	<u>CO₂ Baseline Database for the Indian Power Sector</u>
/23/	<u>Ministry of Environment, Forest and Climate Change (MoEF&CC) Notification dated 14-September-2006 (S.O. 1533I)</u>
Reference/Supporting documents submitted by PP to VVB	
/24/	Wind Energy Purchase Agreement between M/s NSL Wind Power Company (Satara) Pvt Ltd and Bangalore Electricity Supply Company Limited
/25/	• 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 Bangalore Electricity Supply Company Limited (Wholly owned government of Karnataka undertaking). • Meter Replacement Report for NSLC II (Main & Check Meter Replacement) • Meter Replacement Report for NSLC VI (Check Meter Replacement)
/26/	JMRs/B-Forms Issued by Bangalore Electricity Supply Company Limited (BESCOM) to PP i.e., NSL Wind Power Company Private Limited
/27/	Invoices issued by PP to DISCOM i.e., Bangalore Electricity Supply Company Limited (BESCOM)
/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 32 Machines (Wind Turbine Generators) of the project activity issued by Bangalore Electricity Supply Company Limited.
/30/	ReGen Power Tech Private Limited: Technical Specifications of Wind Turbine Generators (WTGs) Suzlon: Technical Specifications of Wind Turbine Generators (WTGs)

/31/	Grievance Register/Grievance-Resolution Letters present on project implemented site; more information related to the same has been included in <u>Section 4.2.2</u> of this report
/32/	Tripping/Breakdown Details
/33/	Monthly Generation Reports/PLF Details/SCADA Details
VB Documents used during Current Verification	
/34/	GPS Google earth software used for Location; <u>Google Earth</u>
/35/	<u>GPS Map Camera: Geotag Photos & Add GPS Location</u>
/36/	Onsite visit on 26-May-2022 to Project implemented site i.e. Bhimasamudra site in Chikkandavadi and Kallavanagathihalli village, Chitradurga District of Karnataka in India. On-site Visit Photographs/Evidences
/37/	Personnel Interviews and Focussed Group Discussions during onsite visit dated 26-May-2022 detailed in <u>section 2.3</u> of this report.
/38/	VKU-Attendance Sheet of Onsite Audit_ VKU.VER.02.22_VCS_706
/39/	Risk Assessment
/40/	VKU-Audit and Sampling Plan_ VKU.VER.02.22_VCS_706
/41/	<u>ISO 14064-3:2019: Greenhouse gases – Part 3: Specification with guidance for the verification and validation of greenhouse gas statements</u>
/42/	<u>ISO 14065:2020: General principles and requirements for bodies validating and verifying environmental information</u>
/43/	<u>ISO/IEC 17029:2019: Conformity assessment – General principles and requirements for validation and verification bodies</u>

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 26-May-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/Focussed Group Discussion

S.no	Name	Gender	Designation	Topic of Discussion
1	Ramesh Bandaru	Male	Assistant Manager NSL Power	Implementation of the project, Baseline emission,
2	Thippe Swamy. S	Male	Senior Supervisor	Emission reduction calculation,
3	M. Venket	Male	Senior Manger	Technical description of the project and monitoring along with QA/QC
4	Anand	Male	Engineer NSL Power	SCADA, Breakdown details and maintenance of generation records
5	Deep J. Borah	Male	WeAct 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	Gender	Designation	Category	Topic of Discussion
1	Ramesh	Male	Driver	Local Stakeholder	Execution of Project activity and its impact on the economic, social and environmental parameters on the local people of the area & around the situated project activity
2.	Santosh	Male	Security Guard		The ongoing communication procedure and the address of their grievance mechanism followed by the project proponent Scope and generation of employment in the locality due to the implementation of said project activity in the area. The ongoing trainings provided to the locals for self-employment.

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/. Through a comprehensive process involving documentation, desk review, document verification, and interviews with site personnel and local stakeholders, the VKU Assessment Team affirms that no negative comments were received during the on-site interviews conducted by the team. For further details, please refer to [section 4.2.2](#) of this report.

2.4 Site Visits

Site Location visited:

Location: Village – Bhimasamudra site, Chikkandavadi and Kallavanagathihalli in District- Chitradurga of State- Karnataka, 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 – Bhimasamudra site, Chikkandavadi and Kallavanagathihalli in District- Chitradurga of State- Karnataka, Country- India on 26-May-2022/36/, to carry out the following;

- An assessment of the implementation and operation of the registered project activity as per the registered VCS Joint PD & MR Version 03 dated 05-February-2019/3/ 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 05-February-2019/3/.
- 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 Joint PD & MR Version 03 dated 05-February-2019/3/ 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 aim of this verification phase is to address any remaining issues that require clarification to enable VKU to reach a favourable conclusion regarding the project description. In the interest of transparency, a customized verification protocol has been developed specifically for this project. This protocol transparently outlines the requirements, methods of verification, and the outcomes of verifying the specified criteria. The verification protocol is organized into three tables, each containing various columns, which are described as follows:

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

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

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

A forward action request is also raised in cases where any required deviation/information is not fulfilled in current verification and thus needs to be taken up in consequent verification for

better transparency thus holding the applicability of the methodology eligible to the project activity and there is no impact of the same on additionality, baseline scenario & emission reduction calculation of project.

Keeping in line with the Clauses 4.1.21 of the VCS Standard Version 4.5/10/, Assessment team has documented a summary of total **07 findings** that include, **00 FARs, 03 CLs and 04 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 Joint Validation and Verification Report/11/ and previous VCS Verification Report /05/ assessment Team confirms that no FAR was raised during Validation and previous Verification which needs to be closed during this verification and **no FAR has been raised during current verification, (01-September-2021 to 30-April-2022; Inclusive of both start and end dates).**

2.6 Eligibility for Validation Activities

VKU has not conducted any validation activities as part of the verification process and does not possess accreditation for validating any pertinent sectoral scope. Therefore, this section does not apply. It is important to emphasize that during the current verification, no validation assessment has been carried out either by VKU or concurrently by other certification bodies. This information has been confirmed through focused group discussions and interviews with the Project Proponent (PP), as documented during the site visit.

Assessment team assessed the VERRA's website on 28-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. VKU Certification Pvt. Ltd is currently undergoing validation accreditation with ANAB for which witness audit has already been conducted. Thus, ensuring that the accreditation details mentioned in FVR is consistent and correct.

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

The project has not 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 with project ID 706² and under CDM³ with same project title i.e., 51 MW Wind Power Project at Chitradurga. This was confirmed by checking VERRA registry website and CDM registry website and similar exercise was performed for 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/16/ and I-REC/17/ 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.

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)

² <https://registry.verra.org/app/projectDetail/VCS/706>

³ CDM: 51MW Wind Power Project at Chitradurga (unfccc.int)

- 6) <https://cri.nccf.in/>
- 7) [International Carbon Registry - International Carbon Registry](#)
- 8) [GCC PROJECTS PORTAL \(globalcarboncouncil.com\)](#)
- 9) [VCU Issuance Records](#)

3.2 Methodology Deviations

No instances of methodology deviation have been identified throughout the current monitoring period from 01-September-2021 to 30-April-2022 (Inclusive of both start and end dates), signifying the adherence and compliance of the project to the prescribed methodologies. Furthermore, it is noteworthy that no methodology deviations were observed during the previous Joint Validation and Verification & and previous VCS Verification processes which were confirmed from the VCS Validation & Verification report /4/ and previous VCS Verification reports/5/, affirming the project's steadfast commitment to upholding the designated methodologies and ensuring accurate and reliable results.

3.3 Project Description Deviations

During the current monitoring period from 01-September-2021 to 30-April-2022 (Inclusive of both start and end dates), no discrepancies or deviations in the project description have been identified. This finding aligns with the absence of any deviations tracked during the VCS Joint Validation-Verification /4/ and previous Verification/5/. To ensure accuracy and compliance, the assessment team cross-references the [project webpage](#) /14/ VCS Joint Validation-Verification Report/4/ and previous Verification Report/5/ to verify the consistent and accurate representation of the project's description.

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 Joint PD & MR /3/ and approved monitoring plan. The project activity is a wind energy project with total installed capacity of 50.4 MW, comprising of 18 Wind Turbine Generators (WTGs) of rated capacity 1.5 MW each of Regen Power Private Limited (RPPL) make and 4 Wind Turbine Generators (WTGs) of rated capacity 2.1 MW each Suzlon make, commissioned in the period from 06-June-2008 to 30-September-2011/29/.

Wind is the main source of power generation. The power generated from the wind turbine generators (WTGs) was exported to previously under southern grid (as project is implemented in southern state Karnataka) which falls now under Unified under Indian Grid system. The Project WTGs are currently operational and had successfully completed 10 years of first crediting period (from 06-June-2018 to 05-June-2028) under VCS (end date of first crediting period was 05-June-2018) and during the current monitoring period (01-September-2021 to 30-April-2022; Inclusive of both the days) under second crediting period, no unforeseen incidents or events occur that could significantly impact the operation of the project activity were identified, with the exception of scheduled maintenance and service breakdowns.

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 70.77% that is mainly accounted for low PLF & major downtime during the current monitoring period. There was unexpected downtime due to wind unavailability and also due to routine maintenance etc.

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/unscheduled breakdowns amounting to **89,736.66 hours** for the purpose of plant maintenance and service. Additionally, there were Lull Hours lasting **6,282.63 hours**.

This downtime including (**Breakdown and Lull Hours**) is approx. **51.66%** of total available hours of operation of the WTGs, during the current monitoring period.

Breakdown Hours = **89,736.66**

Total Operational Hours of WTGs = **185,856**

Breakdown % of Total Operational Hours = $(89,736.66/185,856) * 100 = 48.28\%$

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 70.77% 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.

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

Monitoring Period	Total Hours for The Month	Total Hours	Production Hours	Percentage Of Production Hours	Breakdown Hours	% of Breakdown Hours	Lull Hours	% Of Lull Hours
01-September-2021 to 30-April-2022								
Sep-21	720	23040	12752.86	55.35%	10268.56	44.57%	18	0.08%
Oct-21	744	23808	11042.09	46.38%	11537.96	48.46%	1228	5.16%
Nov-21	720	23040	12242.14	53.13%	10412.04	45.19%	386	1.68%
Dec-21	744	23808	12028.07	50.52%	11101.51	46.63%	678	2.85%
Jan-22	744	23808	11584.07	48.66%	11119.75	46.71%	1105	4.64%
Feb-22	672	21504	9760.81	45.39%	10637.38	49.47%	1105.63	5.14%
Mar-22	744	23808	11022.02	46.30%	12241.65	51.42%	544	2.28%
Apr-22	720	23040	9404.65	40.82%	12417.81	53.90%	1218	5.29%
TOTAL	5808	185856	89836.71	48.34%	89736.66	48.28%	6282.63	3.38%

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
- Error profonde 20 Dig (IGBT got failed)
- Blade tip damaged
- Electrical yearly maintenance
- Hydraulic working time (Yaw break caliper Oil seal damage)
- Preventive action: Others (Blade stud broken). Error profonde 42 dig

The loss of generation hours as a percentage of total operating is 48.28 %

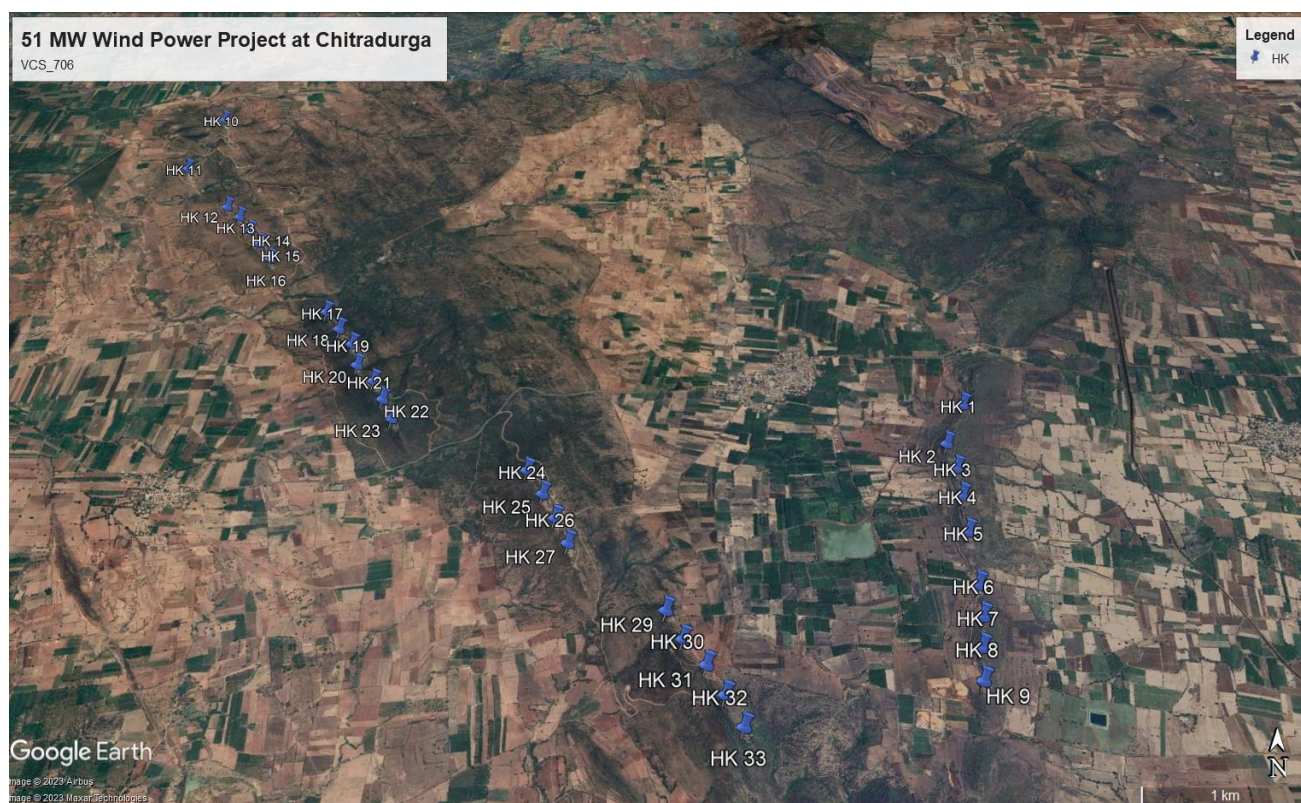
Out of 48.28 % almost the 1/2nd of the breakdown due to Operation and maintenance & the rest is due to lower PLF, grid availability and lull hours.

The total WTGs project activity was operational for a total of 185,856 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 **89,736.66 hours**, as detailed in Appendix 2 of the monitoring report (MR) /1/. The breakdown due to scheduled maintenance is as per the manufacture's specification. Moreover, it is important to note that all the thirty-two 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/32/ 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 26-May-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 26,176.837 MWh of electricity, and thus contributing to 24,802 tCO_{2e} GHG reductions. The emission reduction for this monitoring period pro rata comparing with registered VCS Joint PD & MR is 84,861 tCO_{2e}, whereas actual emission reductions achieved are 24,802 tCO_{2e}, which is 70.77% 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 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 /35/. Moreover, assessment team confirm that the latitude and longitude as mentioned in the registered VCS Joint PD & MR dated 05-February-2019/3/, VCS Joint Validation and Verification Report/04/, VCS MR/1/

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

WTG HT SC No	Location No	Village	District	State	Latitude	Longitude
1	HK 1	Chikkandavadi	Chitradurga	Karnataka	N14 11 02.7	E76 12 32.2
2	HK 2	Chikkandavadi	Chitradurga	Karnataka	N14 10 49.7	E76 12 25.7
3	HK 3	Chikkandavadi	Chitradurga	Karnataka	N14 10 42.1	E76 12 26.8
4	HK 4	Chikkandavadi	Chitradurga	Karnataka	N14 10 33.7	E76 12 26.6
5	HK 5	Chikkandavadi	Chitradurga	Karnataka	N14 10 23.2	E76 12 26.0
6	HK 6	Chikkandavadi	Chitradurga	Karnataka	N14 10 08.8	E76 12 25.6
7	HK 7	Chikkandavadi	Chitradurga	Karnataka	N14 10 00.7	E76 12 25.0
8	HK 8	Chikkandavadi	Chitradurga	Karnataka	N14 09 53.1	E76 12 23.3

9	HK 9	Chikkandavadi	Chitradurga	Karnataka	N14 09 45.3	E76 12 22.1
10	HK 10	Kallavanagathihalli	Chitradurga	Karnataka	N14 13 10.6	E76 08 43.7
11	HK 11	Kallavanagathihalli	Chitradurga	Karnataka	N14 12 43.4	E76 08 39.2
12	HK 12	Kallavanagathihalli	Chitradurga	Karnataka	N14 12 23.0	E14 12 23.0 7
13	HK 13	Kallavanagathihalli	Chitradurga	Karnataka	N14 12 18.9	E76 09 02.5
14	HK 14	Kallavanagathihalli	Chitradurga	Karnataka	N14 12 12.5	E76 09 07.5
15	HK 15	Kallavanagathihalli	Chitradurga	Karnataka	N14 12 06.4	E76 09 11.9
16	HK 16	Kallavanagathihalli	Chitradurga	Karnataka	N14 11 59.5	E76 09 16.8
17	HK 17	Kallavanagathihalli	Chitradurga	Karnataka	N14 11 37.0	E76 09 38.3
18	HK 18	Kallavanagathihalli	Chitradurga	Karnataka	N14 11 30.3	E76 09 43.3
19	HK 19	Kallavanagathihalli	Chitradurga	Karnataka	N14 11 24.4	E76 09 48.0
20	HK 20	Kallavanagathihalli	Chitradurga	Karnataka	N14 11 16.6	E76 09 50.9
21	HK 21	Kallavanagathihalli	Chitradurga	Karnataka	N14 11 10.9	E76 09 56.4
22	HK 22	Kallavanagathihalli	Chitradurga	Karnataka	N14 11 04.4	E76 09 59.9
23	HK 23	Kallavanagathihalli	Chitradurga	Karnataka	N14 10 57.8	E76 10 03.4
24	HK 24	Kallavanagathihalli	Chitradurga	Karnataka	N14 10 41.1	E76 10 39.9
25	HK 25	Kallavanagathihalli	Chitradurga	Karnataka	N14 10 34.0	E76 10 44.3
26	HK 26	Kallavanagathihalli	Chitradurga	Karnataka	N14 10 26.9	E76 10 47.8
27	HK 27	Kallavanagathihalli	Chitradurga	Karnataka	N14 10 19.8	E76 10 51.3
28	HK 29	Kallavanagathihalli	Chitradurga	Karnataka	N14 10 02.1	E76 11 14.3
29	HK 30	Kallavanagathihalli	Chitradurga	Karnataka	N14 09 55.0	E76 11 18.0
30	HK 31	Kallavanagathihalli	Chitradurga	Karnataka	N14 09 48.9	E76 11 23.0
31	HK 32	Kallavanagathihalli	Chitradurga	Karnataka	N14 09 42.0	E76 11 26.8
32	HK 33	Kallavanagathihalli	Chitradurga	Karnataka	N14 09 35.0	E76 11 30.4

The implemented project activity is a Greenfield wind power generation activity. The project activity involves installation of 32 Wind Turbine Generators of total 50.4 MW capacity wind power generation project by M/s. NSL Renewable Power Private Limited. (Project Participant).

Start date of the project activity was 06-June-2008. Which is commissioning/commercial operation of the 1st machine (WTG HK 3) and the project activity was fully commissioned on 30-September-2011 which is the date of commissioning/commercial operation of the last set of 15 WTGs HK 25, HK 27, HK 29, HK 30, HK 31, HK 32, HK 33, HK 26, HK 16, HK 17, HK 18, HK 24, HK 19, HK 20 and HK 21. Assessment team checked the commissioning certificate/28/ 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/05/and VCS standard version 4.5 /10/ in section 3.3 of the report. The project is implemented as per the description provided in the registered VCS Joint PD & MR- /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/04/ Assessment team confirms that the technical parameters are consistent with the registered VCS Joint PD & MR / 3/. The major technical specifications of the WTG are as follows:

Table no 09: Technical specifications of wind turbine generator:

ReGen Turbines technical Specifications:

Parameters	Units
Rated power	1500 kW
Cut-in wind speed	3 m/s
(10 min. mean)	
Rated Wind Speed	approx. 13 m/s
(10 min. mean)	
Cut-out wind speed	22 m/s
(10 min. mean)	
Survival wind speed	52.5 m/s
Generator	Variable Speed, Multi-pole Synchronous with Permanent Magnet Excitation
ROTOR	
Diameter	77
Swept area	4637 sq.m
Speed range (variable)	9 to 17.3 rpm
Number of blades:	3
Power control	Pitch
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 A
ReGen Turbine DP yard transformer	1800KVA/690V

Suzlon 9.1 MW Turbines technical Specifications

Power	
Rated power:	2,100.0 kW
Cut-in wind speed:	4.0 m/s
Rated wind speed:	14.0 m/s
Cut-out wind speed:	25.0 m/s
Survival wind speed:	59.5 m/s
Rotor	
Diameter:	88.0 m
Swept area:	6,082.0 m ²
Number of blades:	3
Rotor speed, max:	15.5 U/min
Tip speed:	71 m/s
Material:	GFK / Epoxy
Power density 1:	345.3 W/m ²
Power density 2:	2.9 m ² /kW
Gear box	
Type:	spur/planetary

Stages:	3
Ratio:	0.110416667
Manufacturer:	Winergy
Generator	
Type:	Asynchronous
Speed, max:	1,830.0 U/min
Voltage:	690.0 V
Grid connection:	Flexi slip
Grid frequency:	50.0 Hz
Tower	
Hub height:	80.0 m
Type:	Steel tube
Shape:	conical
Corrosion protection:	painted
Suzlon Turbine DP yard Transformer:	2500KVA/620V

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 Joint PD & MR /3/ and applied methodology ACM0002, Version 19.0 /13/. The organizational role and responsibility as mentioned in the registered VCS Joint PD & MR /3/ is followed onsite. Meters are calibrated as per calibration frequency in registered Joint PD & MR /3/. All the emergency preparedness as mentioned in MR/1/ are followed onsite and no discrepancies were found regarding the same.

The operational team's primary duty is to closely oversee the day-to-day functioning of the wind turbines. In the event of adverse grid conditions or a grid failure, the turbines will automatically halt operation and restart once conditions stabilize. However, there may be occasions when faults necessitate a thorough examination of the machinery before restarting. Furthermore, the operational team is responsible for recording downtime, operational hours for each turbine, and the causes of any downtime.

Every month, the operational team compiles the logbook data and submits it to the head office. To minimize machine breakdowns, ReGen/Suzlon, the O&M service provider(s), deploys maintenance staff at the plant. They also ensure the availability of critical spare parts and necessary consumables, which are stocked at the project site to reduce machine repair downtime. The O&M service provider maintains a comprehensive collection of tools and equipment on-site, which is accessible to the project site staff.

The site in-charge and the staff work together to conduct routine maintenance checks on major components such as gearboxes, generators, rotor blades, control panels, transformers, and other vital elements. This proactive approach guarantees the smooth and efficient operation of the wind turbines.

Designation	Responsibilities
1. DGM (Projects) - Certifying Official (Authorized for signing invoices):	- This individual is authorized to sign invoices. - They play a crucial role in certifying the accuracy and validity of project-related financial transactions and expenses.
2. Plant Manager - Verification of Correctness of Data:	- The Plant Manager is responsible for ensuring that data related to plant operations and activities are accurate and reliable. - They oversee the verification of data collected and generated within the plant, ensuring its correctness before further processing or reporting.
3. Project Engineer / O & M In-charge - Staff Present During Data Collection by BESCOM/KPTCL:	- Project Engineers or Operation & Maintenance (O&M) In-Charge personnel are designated to be present during data collection activities carried out by BESCOM (Bangalore Electricity Supply Company) or KPTCL (Karnataka Power Transmission Corporation Limited). - Their role is to facilitate and oversee the data collection process, ensuring that it is conducted smoothly and in accordance with established procedures.
These designations delineate the specific responsibilities and roles of each position within the organization, ensuring that the various aspects of project management, data verification, and data collection are carried out efficiently and accurately.	

Assessment team concludes the following:

- There are no material discrepancies between project implementation and the project description provided in the registered VCS Joint PD & MR /3/.
- 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 second crediting period of project description- /3/ and the applied methodology/13/.
- d) Materiality threshold applied is 05% as per 4.1.10 of VCS Standard v4.5, It was concluded that the materiality threshold applicable to the project activity based on the type of project i.e., Project is 05%. This effectively means that there is uncertainty inherent in the estimation of emission reduction of 05%. This is consistent with the section 4.1.10 of VCS standard v4.5 which is equal to 1240.1 tCO₂e.
- e) The GHG emission reductions or removals generated by the project have not been included in any emissions trading program or any other mechanism that includes GHG allowance trading/28/.
- f) Complying with clause 3.24.5 of the VCS Standard version 4.5 /10/ 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/04/ or previous VCS Verification/05/
- g) 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.**
- h) The project is registered under VCS⁴ and CDM⁵ and PP is claiming GHG emission reductions from VCS only for current monitoring period, however PP has submitted the declaration/28/stating, 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/16/ Mechanism database of India and I-REC/17/ 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/16/ (International-Renewable Energy Certificate Standard Standard) I-REC/17/ website and same was verified by checking in other GHG programs including GS Registry, GCC, UCR & CR-I, however PP has submitted the declaration/28/ for the same.
- i) The project activity complies with indicators for **sustainable development** in the interim approval guidelines for Clean Development Mechanism (CDM) projects from India as discussed under **section 1.11 of MR/1/**. Assessment team has verified the same during on site visit/36/ and found all the indicators to be effective and applicable for the project activity.

⁴ <https://registry.terra.org/app/projectDetail/VCS/706>

⁵ <https://cdm.unfccc.int/Projects/Validation/DB/69J8TNRR5CNV4D9LWCAG623YGZQ03F/view.html>

As per the VCS standard version 4.5⁶ 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 fifth Verification of second 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 26,176.837 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 /05/ monitoring report for current monitoring period/1/ & emission reduction sheet/2/ which were cross checked from JMRs/B-Forms/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 24,802 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 eco-friendly, GHG free power which contributes to sustainable development of the region. VKU Assessment/Verification Team has referred previous verification reports /12/

⁶ <https://verra.org/documents/vcs-standard-v4-5/>

monitoring report for current monitoring period/1/ & emission reduction sheet/2/ which were cross checked from JMRs/B-Forms/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 joint PD & MR, 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 and Monitoring Report version 03 dated 05-February-2019/3/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. 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 /35/.

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

Table No 10: Audit History

Audit Type	Period	Program	VVB Name	Number of years
Validation	06-June-2008 to 05-June-2018	VCS	Perry Johnson Registrars CDM Inc.	10 Years
Verification	06-June-2008 to 30-June-2010	VCS	Perry Johnson Registrars Carbon Emissions Services, Inc.	02 Years 00 Months 25 Days
Verification	01-July-2010 to 30-September-2012	VCS	Bureau Veritas Certification	02 Years 03 Months
Verification	01-October-2012 to 31-December-2013	VCS	Bureau Veritas Certification Holding Sas	01 Years 03 Months

Verification	01-January-2014 to 29-February-2016	VCS	LGAI Technological Center, S.A. (Applus+ Certification)	02 Years 02 Months
Verification	01-March-2016 to 31-October-2017	VCS	LGAI Technological Center, S.A. (Applus+ Certification)	01 Years 08 Months
Verification	01-November-2017 to 05-June-2018	VCS	Earthood Services Pvt. Ltd.	07 Months 05 Days
Joint Validation & Verification	06-June-2018 to 30-September-2018	VCS	Earthood Services Pvt. Ltd.	03 Months 25 Days
Verification	01-October-2018 to 31-October-2019	VCS	LGAI Technological Center, S.A. (Applus+ Certification)	01 Years 01 Months
Verification	01-November-2019 to 31-October-2020	VCS	LGAI Technological Center, S.A. (Applus+ Certification)	01 Years 00 Months 00 Days
Verification	01-November-2020 to 31-August-2021	VCS	LGAI Technological Center, S.A. (Applus+ Certification)	10 Months 00 Days
Verification	01-September-2021 to 30-April-2022 ⁷	VCS	VKU Certification Pvt. Ltd.	08 Months 00 Days
Total	-	-	-	13 Years 10 Months 25 days

⁷ Current verification i.e., 5th verification of the second crediting period and overall periodic 11th verification.

This has been checked by the verification team through joint validation and verification/04/ and previous verification reports /05/ already approved and uploaded on Verra's webpage which is deemed accurate and satisfactory to VKU's assessment team.

4.2 Safeguards

4.2.1 No Net Harm

The project activity involves implementation of WTGs as a voluntary measure to strengthen the national grid (Now Unified Indian 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 14-September-2006 (S.O. 1533(E)⁸ /23/, 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.

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/37/ and visits /36/ by the VKU Assessment Team.

4.2.2 Local Stakeholder Consultation

The project in question i.e., VCS 706: "51 MW Wind Power Project at Chitradurga" has undergone stakeholder consultation in compliance with the Verified Carbon Standard (VCS) and local regulations. Various stakeholder groups, including employees of the KPTCL, local residents, farmers, and contractors, were engaged through multiple phases using methods such as focus group discussions and social mapping.

⁸ <http://www.environmentwb.gov.in/pdf/EIA%20Notification,%202006.pdf>

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 4.5/10/. The project proponent's efforts in engaging with stakeholders have been deemed suitable and in line with the prescribed requirements.

Furthermore, the project team maintains regular communication with stakeholders by participating in community meetings and other relevant events. During these interactions, they facilitate a feedback exchange and assess any stakeholder requirements to ensure project alignment and address community needs. Thus, maintaining the on-going communication with the stakeholders.

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

4.3 AFOLU-Specific Safeguards

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

4.4 Accuracy of GHG Emission Reduction and Removal Calculations

The equations and choices provided in the methodology /10/ and all other methodological tools are correctly quoted in the MR /1/. The emission reductions of the project activity are calculated using the formulae mentioned in the applied methodologies i.e., ACM0002 Version 19.0 /13/. The verification team has reviewed the emission reduction spread sheets (ER sheets) /2/ and checked all the formulae and found they are correct and are in accordance with the monitoring plan of the joint PD & MR /03/ and the applied monitoring methodology /10/.

The project monitoring plan involves total 02 parameter to be monitored;

- 1) **EG_y** (Electricity supplied by the plant to the grid);
- 2) **TEG_y** (Total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year y)

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

The parameter **EG_y** value is sourced from Tariff JMRs/B-forms /26/, Proper calibrated meters of 0.2s accuracy class installed at each bulk metering point and regularly monitor the Electricity supplied by the plant to the grid, the parameter **TEG_y** value is sourced from Joint Meter Reading (JMRs)/ B-Forms certificate issued /26/and Invoices/27/, Proper calibrated meters of 0.2s accuracy class installed at metering point and substation regularly monitor the export value which is aggregated on a monthly basis in JMRs & invoices, mentioned in ER sheet/2/ prepared by PP has been reviewed by assessment team thoroughly by cross checking the values of JMRs/B-Forms/26/ submitted by PP and found correct including all the formulae and conversions and aggregations.

The monitoring plan specified in the registered VCS joint Project Description & Monitoring Report version 03, dated 05-February-2019 /3/, 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 /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 "Electricity supplied by the plant 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/2/ provided by the PP.

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

According to applied methodology ACM0002; Version 19.0 /13/ the emissions are calculated as below:

According to applicable methodology ACM0002; Version 19.0⁹ under section 5 of Baseline Methodology Procedure with further description under section 5.4 and paragraph number 34-page 13 about Project emissions & under section 5.6 and paragraph number 56-page 20 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: $LE_y = 0 \text{ tCO}_2$

Project Emissions (PE_y) = 0 tCO_2

GHG Calculations:

The calculation of emission reduction has been done in accordance with the applied methodology used i.e., ACM0002 Version 19.0 /13/. As per the applied methodology, the values of project emission and leakages are considered as zero for the project activity. The equation used for calculation of baseline emission is given below:

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 07: 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)	
= 15,914.767 MWh * 0.9475 tCO ₂ /MWh	
= 15,079 tCO₂e (Round down Value)	
Therefore, the baseline emissions for Year 2022 (from 01-January-2022 till 30-April-2022)	
= 10,262.07 MWh * 0.9475 tCO ₂ /MWh	

⁹ [OX6IERWMG92J7V3B80TKFSL1QZH5PA \(unfccc.int\)](#)

= 9,723 tCO₂e (Round down Value)

The Total baseline Emissions =15,079 + 9,723 = 24,802 tCO₂e

All of the 32 WTGs were in operation throughout the current monitoring period, and the project activity generated 26,176.837 MWh of energy, resulting in 24,802 tCO₂e GHG reductions.

Estimated Emission Reduction as in VCS Joint PD & MR 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 Joint PD & MR-	127,993 (tCO ₂ e)
Estimated Emission Reduction as in VCS Joint PD & MR- for the equivalent period of the current Monitoring period	= (Annual Estimated GHG emission reductions as per revised VCS Joint PD & MR- /Total days in a year) *days in current monitoring period = (127,993 /365) * 242 = 84,861 (tCO₂e)

The estimated emission reduction for the present monitoring period is 84,861 tCO₂e, however the achieved emission reductions are 24,802 tCO₂e (round down value), or around 70.77% 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 B-Forms/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 DICOM i.e., BESCO (Bangalore Electricity Supply Company) according to the PPA /24/. The operational and Maintenance 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 the project activity WTGs is metered at Group controller stations and further measured at HT end of the 33/66 KV substation at KN Halli. Each 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 Joint Project Design and Monitoring Report/3/ and MR/1/, the net electricity supplied to the grid by the wind farm is measured using BESCO meters installed at HT end of the 33/66 KV substation at KN Halli.

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 B-Forms/JMRs, performed jointly by representatives of the State Utility and the project proponent (PP).

PP has submitted all the evidences like JMRs/B-forms /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 19.0” /13/.

4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

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

When assessing the audit trails, VKU also examined:

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

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

There is total 02 parameters to be monitored;

- 1) **EG_y** (Electricity supplied by the plant to the grid);
- 2) **TEG_y** (Total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year y)

The below table describe how the parameter **EG_y (Electricity supplied by the plant to the grid)**, 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 EGy (Electricity supplied by the plant to the grid)

Parameter	EGy (Electricity supplied by the plant to the grid)	
Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	Monthly electricity export and import data for all 32 WTGs in the project are recorded at four metering points (NSLC III, NSLC IV, NSLC V, NSLC VI) by representatives from BESCOM and the Project Participant. BESCOM calculates transmission line losses using the monthly electricity export data from both the group controller station meter and the substation meter (TEGy), as specified in their signed PPA. Subsequently, BESCOM provides line loss calculation sheets on a monthly basis. These calculations are summarized in Joint Meter Reading Statements (Form B), which BESCOM submits to the Project Participant. These statements include details on electricity export, electricity import, transmission line losses, and the net electricity exported value at each grid controller station.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology mentioned in registered joint PD & MR version 03 dated 05-February-2019 /3/.
	Monitoring equipment	Electricity exported and imported from the grid is recorded using metering points located at grid controller stations, specifically NSLC III, NSLC IV, NSLC V, and NSLC VI. These controller stations collectively measure the net electricity supplied to the grid by all 32 WTGs. Notably, not every WTG has an individual metering location; hence, each controller station measures electricity

		supplied by multiple WTGs. All meters employed in this process are of the bi-directional tri-vector type, possessing an accuracy class of 0.2s. In addition to readings collected at the group controller points, electricity export readings are also obtained at the grid interconnection point and the 66 kV substation, namely NSLC I and NSLC II. Utilizing these readings from the group controller points and the substation, the state electricity utility prepares a monthly statement, referred to as "Form B." This document details the electricity supplied by each WTG, accounting for transmission losses and electricity imports. The transmission loss calculations are conducted by BESCO/KPTCL personnel based on the electricity export readings recorded at the group controller points and the 66 kV substation. These loss calculations are then provided alongside Form B.	
	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_y i.e., import, export and Transmission losses is 0.2s, which is as per the registered joint PD&MR /3/ which is as per the norm defined in PPA/24/.	
	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:	As per section 4.2 of VCS Joint PD & MR /3/, the calibration frequency is annually.
	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 Joint PD & MR dated 05-February-2019/3/ The calibration frequency is annually as per PPA/24/
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes, Calibration certificates /25/ of the measuring equipment's is carried out by State DISCOM i.e., BESCO (Bangalore Electricity Supply Company Limited Limited). All the meters are tested by Bangalore Electricity Supply 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 i.e., from 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 3.2/11/& as per PPA/24/ The calibration is carried out for a measuring

		range i.e., CTR: 300/1-1A, PTR: 66kV/110V & MF: 1,80,000 with accuracy class 0.2s for NSLC – 01 & NSLC – 02 and CTR: 300/1-1A, PTR: 33kV/110V & MF: 90,000 with accuracy class 0.2s for NSLC – 03, NSLC – 04, NSLC – 05 & NSLC – 06.								
	How were the values in the monitoring report verified?	Cumulative value of EG_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/B-forms/26/ and cross checked from invoices/27/ thus found to be consistent. Value of this parameter for the current monitoring period was verified as 26,176,837 kWh. <table><tr><th>Year</th><th>Net Electricity Generation (kWh)</th></tr><tr><td>2021</td><td>15,914,767</td></tr><tr><td>2022</td><td>10,262,070</td></tr><tr><td>Total</td><td>26,176,837</td></tr></table>	Year	Net Electricity Generation (kWh)	2021	15,914,767	2022	10,262,070	Total	26,176,837
Year	Net Electricity Generation (kWh)									
2021	15,914,767									
2022	10,262,070									
Total	26,176,837									
	If applicable, has the reported data been cross-checked with other available data?	The monthly reported values of EG_{y,y} in JMRs/B-forms/25/ were further cross checked with the monthly invoices /26/ raised by the PP to BESCO (Bangalore Electricity Supply Company Limited Limited) 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 BESCO representative and plant personnel. The meters at the substation								

		will be two-way meters and will be in the custody of BESCO. The quantity of net electricity supplied is cross-verified from the invoice raised on BESCO by the project proponent
	In case project proponents have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	No such issues.
Findings	CL#02 & CAR#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 **TEGy** (Total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year y), that is to be measured according to the monitoring plan, has been verified to confirm that the actual monitoring complies with the monitoring plan, monitoring data has been thoroughly assessed and that the calibration requirements are met:

Table No: 12 Assessment of Parameter TEGy (Total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year y)

Parameter	TEGy (Total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year y)	
Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	Measuring frequency – Continuous Recording frequency – Monthly Using the monthly electricity export data recorded at both the group controller station meter and the substation meter (TEGy), BESCO calculates the transmission line loss in strict compliance with the terms outlined in the signed Power Purchase Agreement (PPA) between BESCO and the Project Participant. Subsequently, BESCO generates monthly line loss calculation sheets. These calculation sheets detail the losses incurred in the transmission of electricity. Subsequently, BESCO compiles the Joint Meter Reading Statements, referred to as "Form B." These statements are then submitted by BESCO to the Project Participant. Form B provides a comprehensive breakdown of key information, including electricity export, electricity import, transmission line losses, and the net electricity exported value at each individual grid controller station.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/3/ and monitoring methodology/13/. Also, in current monitoring period there is no

	methodology? (Yes / 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/35/ and interviews/37/ with site personnel.
	Monitoring equipment	Electricity export/import is recorded at 4 grid controller stations: NSLC III, NSLC IV, NSLC V, and NSLC VI, covering all 32 WTGs. As not all WTGs have dedicated meters, each controller station records electricity from multiple WTGs. Meters used are bi-directional tri-vector type with 0.2s accuracy. In addition to group controller readings, export data is also collected at grid interconnection points NSLC I and NSLC II. The state utility compiles a monthly statement (Form B) for each WTG, factoring in transmission loss and imported electricity. Transmission loss is computed by BESCOM/KPTCL based on export readings from both group controllers and the 66 kV substation.
	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 TEG_y i.e., import, export and Transmission losses is 0.2s, which is as per the registered joint PD&MR/03/ which is as per the norm defined in PPA /24/.
	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:	As per section 4.2 of VCS Joint PD & MR /3/, the calibration frequency is annually.
	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 /13/. Outlined in the registered VCS Joint PD & MR dated 05-February-2019/3/ The calibration frequency is annually as per PPA/24/
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes, Calibration certificates /25/ of the measuring equipment's is carried out by State DISCOM i.e., BESCO (Bangalore Electricity Supply Company Limited Limited). All the meters are tested by Bangalore Electricity Supply 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 i.e., from 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 3.2/11/& as per PPA/24/ The calibration is carried out for a measuring

		range i.e., CTR: 300/1-1A, PTR: 66kV/110V & MF: 1,80,000 with accuracy class 0.2s for NSLC – 01 & NSLC – 02 and CTR: 300/1-1A, PTR: 33kV/110V & MF: 90,000 with accuracy class 0.2s for NSLC – 03, NSLC – 04, NSLC – 05 & NSLC – 06.								
	How were the values in the monitoring report verified?	Cumulative value of TEG_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/B-forms/26/ and cross checked from invoices/27/ thus found to be consistent. Value of this parameter for the current monitoring period was verified as 26,172,000 kWh. <table><tr><th>Year</th><th>Total Import Electricity (kWh)</th></tr><tr><td>2021</td><td>15,911,100</td></tr><tr><td>2022</td><td>10,260,900</td></tr><tr><td>Total</td><td>26,172,000</td></tr></table>	Year	Total Import Electricity (kWh)	2021	15,911,100	2022	10,260,900	Total	26,172,000
	Year	Total Import Electricity (kWh)								
	2021	15,911,100								
2022	10,260,900									
Total	26,172,000									
If applicable, has the reported data been cross-checked with other available data?	The monthly reported values of TEG_y were verified from JMRs/B-forms /26/ issued to PP by state entity i.e., BESCO which were further cross checked with the monthly invoices /27/ raised by the PP to respective captive user as specified in PPA/24/ 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.	

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

Parameter	Unit	Description	Value
EF _{OM,y}	tCO ₂ /MWh	Operating margin emission factor of Indian Grid	0.9726 tCO₂/MWh is consistent with the registered VCS Joint PD & MR Version 03 dated 05-February-2019/3/ Calculated from <u>CEA database, Version 13, June-2018/21/</u>
EF _{BM,y}	tCO ₂ /MWh	Build Margin Emission Factor of Southern Regional Electricity Grid	0.8723 tCO₂/MWh is consistent with the registered VCS Joint PD & MR- Version 03 dated 05-February-2019/3/ Calculated from <u>CEA database, Version 13, June-2014/22/</u>

$EF_{CO_2, grid, y}$	tCO ₂ /MWh	Combined Margin Emission Factor of Southern Regional Electricity Grid	0.9475 tCO₂/MWh is consistent with the registered VCS Joint PD & MR Version 03 dated 05-February-2019/3/ Combined Margin Emission Factor ($EF_{CM, y}$) is calculated as the weighted average of Operating Margin Emission Factor ($EF_{OM, y}$) and Build Margin Emission Factor ($EF_{BM, y}$) In case of wind power projects default weights of 0.75 for EFOM and 0.25 for EFBM are applicable as per ACM0002.
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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 Joint PD & MR/3/, the meters are supposed to undergo testing/calibration once in a year. The meter calibration is not under the purview of PP.

KPTCL is the sole authority to conduct the meter calibration. Details of meters are provided in below table:

Table No: 14 Calibration details of meters: The calibration details of meters installed by Karnataka Power Transmission Corporation Limited (KPTCL) for measurement of $EG_{y,}$ and $TEG_{y,}$ are as below.

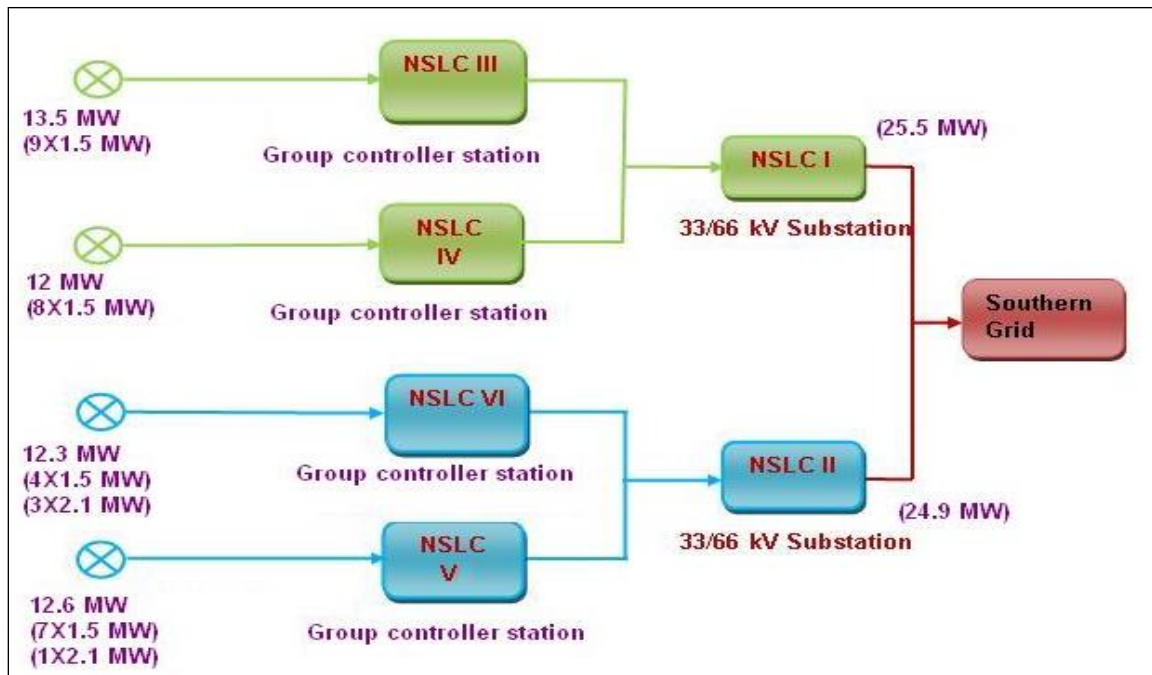
Metering Points	Meter Details				Previous Calibration/Installation Date	Current Calibration Date	Validity Date
	Serial no	Make	Type	Accuracy class			
NSLC I	Main meter – 11071857	L & T	3P4W	0.2s	04-August-2021	11-02-2022	10-02-2023
	Check meter – 15195281						

NSLC II	Old Main meter – 11071861	L & T	3P4W	0.2s	04-August-2021	However, NA Since meter has been replaced on date 22-10-2022	However, NA Since meter has been replaced on date 22-10-2022
	Old Check meter – 11071863						
	New Main meter – 21004960	L & T	3P4W	0.2s	22-October-2021	11-02-2022	10-02-2023
	New Check meter – 21005001						
NSLC III	Main meter – 07022896	L & T	3P4W	0.2s	04-August-2021	11-02-2022	10-02-2023
	Check meter – 07022921						
NSLC IV	Main meter – 07022985	L & T	3P4W	0.2s	04-August-2021	11-02-2022	10-02-2023
	Check meter – 07022986						
NSLC V	Main meter – 09142342	L & T	3P4W	0.2s	04-August-2021	11-02-2022	10-02-2023
	Check meter – 13191365						
NSLC VI	Main meter – 11071865	L & T	3P4W	0.2 S	04-August-2021	11-02-2022	10-02-2023
	Old Check meter – 13191363					However, NA Since meter has been replaced on date 22-10-2022	However, NA Since meter has been replaced on date 22-10-2022
	New Check meter – 11071863	L & T	3P4W	0.2 S	22-October-2021	11-02-2022	10-02-2023

There are thirty-two WTGs connected to four feeders at the plant site i.e., NSLC III, NSLC VI, NSLC V and NSLC VI which are further connected to two bulk metering point i.e., NSLC I and NSLC II located at substation involved for the measurement of electricity import and export. The provision of calibration/testing frequency is annually as prescribed under the VCS Joint PD & MR /3/. This is verified by assessment team from the calibration certificates/25/ submitted by the PP. As per VCS Joint PD & MR /3/ 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 /24/ with the electricity distribution utility, there are a set two meters each: 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 permissible 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



Power is generated & directly sent to substation through 33kV line, Billing meters are installed in between substation and GCS towards generators.

Voltage Transformation is taking place as:

- Substation to WTG DP Yard: 33kV/1800KV.
- WTG DP Yard to WTG Input ACB: 1800/690V
- WTG Input ACB to Converter panel: 690V/420V
- Converter Panel to Hub: 420V/420V

The registered VCS Project Description & Monitoring Report version 03 dated 05-February-2019/3/ & MR /1/ and site audit observations confirm that the metering equipment are sealed and maintained by the Karnataka Power Transmission Corporation Limited (KPTCL)/BESCOM. Each metering point have 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 BESCOM (Bangalore Electricity Supply Company Limited) and the Company Representative, 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 KVArh measurement of meters, and 0.5% for current and voltage transformers. The meter calibration is not under the purview of PP. BESCOM 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 BESCOM (Bangalore Electricity Supply Company Limited) and PP has no control over the same as confirmed through interviews of site personnel /37/ and PPA /24/. 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 assessment team has verified the B-Forms/JMRs /26/ issued by BESCOM to PP & Invoices/27/issued to BESCOM by NSL Renewable Power Private Limited 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:

$$BE_y = EG_{PJ,y} * EF_{grid,CM,y} \dots\dots\dots \text{Equation (11) of ACM0002 V.19}$$

Where:

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

$EG_{PJ,y}$ = 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 CO₂ emission factor for grid connected power generation in year y calculated using the latest version of the “Tool to calculate the emission factor for an electricity system” (t CO₂/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

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

EF_{Co2} = CO₂ Emission Factor in year y (tCO₂e/MWh)

$EF_{Grid,CM,y}$ = Combined margin CO₂ Emission Factor of Indian Grid (tCO₂e/MWh)

Parameter	Unit	Value
$EG_{PJ,y}$	MWh	26,176.837.60
EF_{Co2}	tCO ₂ e	0.9475
BE_y	tCO ₂ e)	26,176.837.60* 0.9475
BE_y	tCO ₂ e)	24,802 (Round down value)
PE_y	tCO ₂ e)	0
LE_y	tCO ₂ e)	0
Net GHG emission reductions or removals tCO ₂ e	tCO ₂ e)	24,802 (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 70.77% Lower than the estimated ERs in the registered VCS Joint PD & MR/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 & Breakdown 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 using the PLF data made available by PP by providing the Monthly Generation Reports/SCADA/33/ data. Hence based on the data provided by PP. the following deductions were made.

Table No: 15 Variation of PLF from ex-ante estimation for current monitoring period i.e., from 01-September-2021 to 30-April-2022 (Inclusive of both start and end dates)

Monitoring Period Months	PLF achieved %	PLF ex ante	Avg PLF achieved at Project level
Sep-21	17.50%	30.60%	8.94%
Oct-21	5.24%	30.60%	8.94%
Nov-21	9.79%	30.60%	8.94%
Dec-21	10.79%	30.60%	8.94%
Jan-22	8.28%	30.60%	8.94%
Feb-22	8.36%	30.60%	8.94%
Mar-22	8.35%	30.60%	8.94%
Apr-22	3.29%	30.60%	8.94%
Total	8.94%	30.60%	8.94%

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

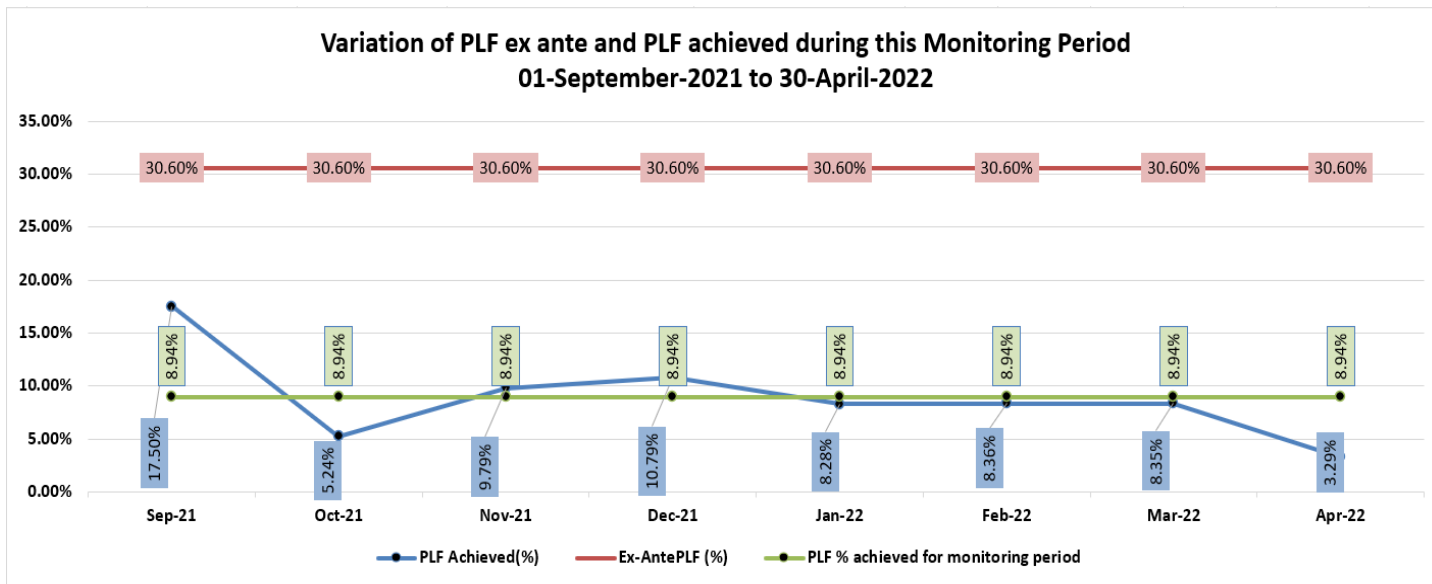


Figure 03: Trends of PLF from September 2021 to April 2022:

Based upon the Figure 03, it is clear that the trend of PLF is lower than the estimated. This is reflected in lower emission reductions for the current monitoring period at 70.77%.

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 Joint PD & MR Version 03 dated 05-February-2019/3/ & hence acceptable to VKU.

Hence the 70.77% 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/35/ 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 /10/ and that the verification of the GHG statement was conducted in accordance with ISO 14064-3; 2019.

4.6 Non-Permanence Risk Analysis

This project is not an AFOLU project, hence not applicable.

5 VERIFICATION OPINION

VKU Certification Pvt. Ltd. has performed the fifth verification of the second crediting period (06-June-2018 to 05-June-2028, which is inclusive of both dates) and overall eleventh verification for the project activity “51 MW Wind Power Project at Chitradurga.” in India, VCS Registry Project ID 706, 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 “51 MW Wind Power Project at Chitradurga” amounts to 24,802 tCO₂e. These reported reductions have been assessed in accordance with the relevant requirements outlined in the VCS Standard, version 4.5/10/.

The project proponents of the “51 MW Wind Power Project at Chitradurga” 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 Joint PD & MR version 3.0 dated 05-February-2019 /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 section 4.1 of VCS Standard version 4.5/10/ and GHG program applied, on the reported greenhouse gas emission reductions from the project.

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

- The project has been implemented and operated as per the registered VCS Joint PD & MR version 3.0 dated 05-February-2019 /3/
- The monitoring is in place as per the applied baseline and monitoring methodology; ACM0002. Consolidated baseline methodology for grid connected electricity generation from renewable sources Version 19/13/
- The monitoring report and other supporting documents provided are complete and verifiable and in accordance with the applicable VCS Standard version 4.5/10/ requirements;

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 dated 28-September-2023** for the “51 MW Wind Power Project at Chitradurga” 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 16: Opinion/Conclusion by Validation-Verification Body

Opinion	Final Documents	Monitoring Period	Emission Reductions achieved	Remarks
Positive opinion ☒ Negative Opinion ☐ Adverse Opinion ☐ Unmodified Opinion ☒ Modified Opinion ☐	Monitoring Report Version 3.1 dated 28-September-2023 Emission Reduction Sheet Version 3.0 dated 12-September-2023	01-September-2021 to 30-April-2022 (Inclusive of both the days)	24,802 tCO₂e	The GHG emission reductions are calculated on the basis of approved methodology ACM0002: Grid-connected electricity generation from renewable sources --- Version 19/10/ and the monitoring plan included in the registered VCS Joint PD & MR /3/

Hence VKU is able to certify that the emission reduction from the project during the current monitoring period 01-September-2021 to 30-April-2022 (Inclusive of both start and end dates) amounts to **24,802 tCO₂e** assessed in line with the applicable VCS requirements set out in section 3.15 of VCS Standard version 4.5/10/

The VVB hereby issues a resolutely **positive and unmodified opinion** meticulously drafted in strict accordance with ISO 14064-3:2019, /41/ Section 09, and the precise provisions of Clause 9.7.1.6 & 9.7.2 of ISO 14065:2020. /42/ This opinion stands in full alignment with the exacting requirements delineated in ISO/IEC 17029:2019, Section 9.7./43/

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

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

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
Year 2021 (01- September-2021 to 31-December-2021)	15,079	0	0	15,079
Year 2022 (01-January-2022 to 30-April-2022)	9,723	0	0	9,723
Total	24,802	0	0	24,802

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

Year	Ex-ante emissions reductions/r emovals	Achieved emissions reductions/re movals	Percent difference	Justification for the difference
Verification period: 01-September-2021 to 30-April-2022 (Inclusive of both start and end dates)	84,861	24,802	-70.77%	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
AT	Assessment Team
BE	Baseline Emissions
BESCOM	Bangalore Electricity Supply Company Limited
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
DR	Desk review
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
NGO	Non-governmental Organization
ODA	Official Development Assistance
PDD	Project Design Document
PE	Project Emission

PP(s)	Project Proponent(s)
PPA	Power Wheeling Agreement
PSA	Power Sale Agreement
Ref.	Document Reference
RoCP	Renewal of Crediting Period
SLDC	State Load Dispatch Centre
SS(s)	Sectoral Scope(s)
TA(s)	Technical Area(s)
TR	Technical Reviewer/Technical Review
KPTCL	Karnataka Power Transmission Corporation Limited
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

CL: Clarification Request_03

CAR: Corrective Action Request_04

FAR: Forward Action Request_00

Description of Clarification Requests (CLs) raised by VVB:

Type	Date	20-June-2022
CL#01	Reference	Section of Ver protocol:1
Description of the Non-Conformance		
1) PP is requested to provide Commissioning Certificates to the VVB for the verification 2) PP is requested to submit the ER sheet for the verification of Emission Reduction achieved in the current Monitoring Period by the project activity to the VVB. 3) PP is requested to submit the declaration to the VVB confirming there is no credit received or claimed for this monitoring period as mentioned in section 1.10		
1 st Response from PP	Date	12-September-2022
1) PP hereby confirms that the commissioning certificates of all the machines have been submitted to VVB during the course of verification 2) PP has updated and submitted the ER sheet corresponding to the current monitoring ad verification period. 3) PP hereby confirms that required declaration has been submitted to VVB along with other supporting documents.		
1 st Assessment by Audit Team	Status	Open/Closed
Date	14-October-2022	
1) Assessment team confirms that PP has submitted the commissioning certificates of all the WTGs to the VVB and the commissioning dates have been successfully verified. (Closed) 2) Assessment team also verifies that PP has submitted the ER sheet to the VVB for verification. (Closed) 3) VVB was not able to find the declaration in the documents submitted by the PP. PP is thus requested to submit the same. (Open) 4) PP is requested to submit the renewable energy certificates as per the guideline to fill the VCS monitoring period version 4.3 in section 1.10 of MR (Open) 5) PP is requested to submit Power Purchase agreement to the VVB for verification. (Open)		
2 nd Response from PP	Date	14-September-2023
3. Declaration to confirm there is no credit received or claimed for this monitoring period is provided to the VVB. 4. PP has submitted the required renewable energy certificates as per the guideline for the monitoring period to the Assessment team. 5. Power Purchase agreement signed between PP and BESCOM has been submitted to VVB		

2nd Assessment by Audit Team	Status	Closed	Date	16-September-2023
3. The assessment team confirms that PP has submitted the required declaration to confirm there is no credit received or claimed for this monitoring period to the VVB. 4. The assessment team confirms that PP has submitted the required renewable energy certificates as per the guideline for the monitoring period to the Assessment team. 5. PP has submitted a Power Purchase agreement signed between PP and BESCO to the VVB for verification confirmed by the assessment team. Hence VKU's assessment team confirms that CL#01 is closed.				

Type		Date	20-June-2022	
CL#02		Reference	Section of Ver protocol:2	
Description of the Non Conformance				
1) PP is requested to explain the reason for the non- applicability of the section 2.3 of MR				
2) PP is requested to Provide monthly Joint Meter Readings /Invoices of each WTGs to the VVB for verification				
3) PP is requested to provide Calibration Certificates to the VVB for verification				
1 st Response from PP		Date	12-September-2022	
1) PP would like to clarify that non-applicability of section 2.3 of the MR is mainly due to project being NON-AFOLU.				
2) PP hereby confirms that all the monthly records (B-Forms and invoices) for all the project WTGs have been submitted to VVB				
3) PP hereby confirms that the required meter calibration certificates have been submitted to VVB during the desk review and also during the course of verification on-site visit.				
1 st Assessment by Audit Team	Status	Open/ ~~Closed~~	Date	14-October-2022
1) PP has updated the section 2.3 of MR and it is verified by the assessment team. (Closed)				
2) Assessment team verifies that PP has submitted B-Forms issued by the State utility BESCO to PP and Invoices issued by PP to BESCO. (Closed)				
3) Assessment team also confirms that PP has submitted the calibration certificates to the VVB. (Closed)				
However				
4) PP is requested to provide the B-forms issued by BESCO to PP/Invoices raised by PP to BESCO for the month of March and April. As the verification is requested for the Current monitoring period is from 01-September-2021 to 30-April-2021 (Open)				
2 nd Response from PP		Date	14-September-2023	
4)B-forms and Invoices for the month of March and April have been submitted.				
2 nd Assessment by Audit Team	Status	Closed	Date	16-September-2023

4)Assessment Team confirms that the B-forms issued by BESCOM to PP and Invoices raised by PP to BESCOM for the month of March and April are well received.

Hence VKU's assessment team confirms that CL#02 is closed.

Type	Date	27-September-2023
CL#03	Reference	Section of Ver protocol: 01/OSV/DR/TR 02/OSV/DR/TR 03/OSV/DR/TR 04/OSV/DR/TR
Description of the Non Conformance		
1. PP to state the status of the project activity with respect to AFLOU as per the VCS MR template in section 1.2 of MR. 2. The coordinates do not point to WTG upon checking in the google earth pro. 3. Please clarify GHG emission avoidance/removal is decreased or increased due to the project activity in SDG table in section 1.11 of MR. 4. As per VCS v4.4 para 3.18.2 this section also needs to disclose about the socio-economic impacts. OPEN. 5. Is all the energy generated from this project sent directly to the sub-station? If no, please elaborate. What is the voltage transformation that is taking place from the hub till the sub-station. The location of billing meters are not mentioned. 6. Transformer details not mentioned in the technical specifications section in 3.1 of MR 7. Since the billing is based on the meter readings taken at Hirekandavadi SS and the bulk meter reading at KN Halli SS, PP to provide the calculation involved through an illustration. Also, if the billing dates do not match with the dates of the monitoring period, how is the energy measurement performed.		
1stResponse from PP	Date	28-September-2023
1. The project is not a grouped project nor an AFOLU project activity 2. The geo-coordinate has now been corrected; it only had a small change in seconds. 3. The SDG indicator number 13 is aiming to avoid the GHG emissions. 4. The section 2.2 mentions about the socio-economic impact and also in-line with registered PD. 5. Yes, all power we send directly to substation through 33kV line, Billing meters are installed in between substation and GCS towards generators. Voltage level from • Substation to WTG DP Yard: 33kV/1800KV. • WTG DP Yard to WTG Input ACB : 1800/690V • WTG Input ACB to Converter panel: 690V/420V • Converter Panel to Hub: 420V/420V 6. Technical Specification of installed ReGen Turbine DP yard transformer: 1800KVA/690V 7. Technical Specification of installed Suzlon Turbine DP yard transformer: 2500KVA/620V 8. Normally we commissioned bulk meters towards 66kV metering, then we commissioned		

on site tariff meter, so generation is recorded on 33kV site meters, then it is recorded on bulk meter.				
1stAssessment by Audit Team	Status	Closed	Date	28-September-2023
1. Assessment Team confirms that incompliance with the VCS MR template guidelines version 4.2 PP has stated the status of the project activity with respect to AFLOU as per the VCS MR template in section 1.2 of MR. 2. Assessment Team confirms that the geo- coordinates are corrected. 3. Assessment Team confirms that PP has clarified the GHG emission are avoiding GHG gases/ tCO₂ due to the project activity in SDG table in section 1.11 of MR. 4. Assessment Team confirms that PP has updated this section about the socio-economic impacts. 5. Assessment Team confirms that PP has provided information about the voltage transformation that is taking place from the hub till the sub-station. 6. Assessment Team confirms that PP has mentioned the details about Transformer in section 3.1 of MR. 7. Assessment Team confirms that PP has mentioned details about the bills mismatch.				
Hence VKU's assessment team confirms that CL#03 is closed.				

Description of Corrective Action Requests (CARs) raised by VVB:

Type	Date	20-June-2022		
CAR#1	Reference	Section of Ver protocol:4/DR/OSV/AT		
Description of the Non Conformance				
1) PP is requested to update the MR as per VCS MR template version 4.1 as the MR is currently made in version 4.0				
2) It is further requested to kindly update the CONTENT page as per the template guidelines in the latest VCS MR template version 4.1.				
1 st Response from PP		Date	12-September-2022	
1) PP would hereby like to confirm that the MR has been now updated as per the latest VCS template (VCS version 4.1). The final submitted version can be referred.				
2) The content page of the report is now updated and is now part of the VCS template version 4.1				
Submission: Please refer to the updated MR version 02, dated 09 Sep 2022.				
1 st Assessment by Audit Team	Status	Open/ ~~Closed~~	Date	14-October-2022
1. PP has updated the content page of the report as per VCS MR template latest version 4.1 However				
2. PP to maintain the consistency of the font and font size as per VCS Monitoring template version 4.1 throughout the report. i.e., either Arial or Century Gothic 10.5-point, black, regular (non-italic) font is acceptable. Please update Cover page, Section 1.3, 1.4 & 5.1 (Open)				
2 nd Response from PP		Date	14-September-2023	
1) The MR has been updated as per version 4.2 template and the same has been submitted to VVB.				
2) The font has been made consistent throughout the MR.				
2 nd Assessment by Audit Team	Status	Closed	Date	16-September-2023
1) The MR has been updated as per version 4.2 template and the same has been submitted to VVB same has checked in MR and hence confirmed by the assessment team.				
2) The assessment team confirms that PP has made the font consistent in line with the VCS template version 4.2 guidelines.				
Hence VKU's assessment team confirms that CAR#01 is closed.				

Type	Date	14-October-2022
CAR#02	Reference	Section of VER Protocol: Cover page & 01/DR/OSV/AT
Description of the Non Conformance		

1) PP is requested to update the date of submission according to submission date of report to the VVB for verification.				
2) PP is requested to use constant Date format throughout the MR.				
3) PP is requested to add weblink to the VCS project as reference in the footnotes on cover page				
4) PP is requested to provide weblink reference in the footnotes to provide a better clarification in section 1.1 of MR				
5) The project is a RoCP. Please include this critical information in the project description i.e., 1.1 section of MR				
1 st Response from PP			Date	12-September-2023
1) Updated the date of submission according to the submission date of the report to the VVB for verification same has checked in MR and hence confirmed by the assessment team				
2) Required changes has made in MR regarding the use of constant Date format.				
3) The weblink has been added in the footnote on the cover page.				
4) The weblink reference has been added in the footnote on the cover page 1.1 of MR				
5) Information of RoCP has been updated in Section 1.1 of the MR				
1 st Assessment by Audit Team	Status	Closed	Date	16-September-2023
1) Assessment Team confirms that PP has updated the date of submission according to the submission date of the report to the VVB for verification.				
2) Assessment Team confirms that PP has made required changes in MR regarding the use of constant Date format.				
3) Assessment Team confirms that the weblink has been added in the footnote on the cover page by PP.				
4) Assessment Team confirms that the weblink reference has been added in the footnote on the cover page 1.1 of MR by PP.				
5) Assessment Team confirms that PP has Information of RoCP has been updated in Section 1.1 of the MR.				
Hence VKU's assessment team confirms that CAR#02 is closed.				

Type	Date	14-October-2022
CAR#03	Reference	Section of VER protocol: Section 03, 04 & 05/DR/OSV/AT
Description of the Non Conformance		
1) PP to please specify the date of commissioning. In section 3.1 of MR 2) PP is also requested to mention technical specifications of the technology employed in the project activity in section 3.1 i.e., Implementation status of MR. 3) PP is requested to submit previous monitoring report and Verification report to the VVB as it was not found on VCS website. https://registry.terra.org/app/projectDetail/VCS/706 section 3.2.2 of MR		

4) PP is requested to please religiously use the proper description of the PD referred, i.e. JOINT PD-MR RoCP					
5) PP is requested to mention the procedures used for handling any internal auditing performed at site, as per VCS guideline to fill MR version 4.1. PP is also requested to specify about emergency preparedness, as the same has not been provided any description in the registered Joint PD-MR version 03, dated 05-February-2019.					
6) PP to specify the DISCOM mentioned in Appendix of MR.					
1 st Response from PP			Date	14-September-2023	
1) The date of commissioning has been Specified In section 3.1 of MR by the PP.					
2) The technical specifications of the technology employed in the project activity updated in the MR.					
3) Previous monitoring report and Verification report has been submitted to the VVB					
4) PP has used the proper description of the PD referred, i.e., JOINT PD-MR RoCP					
5) The procedures used for handling any internal auditing performed at the site, and emergency preparedness have been updated as per VCS MR template version 4.2.					
6) The DISCOM is mentioned in the Appendix of MR.					
1 st Assessment by Audit Team		Status	Closed	Date	16-September-2023
1) Assessment team confirms that the PP has defined the date of commissioning in section 3.1 of MR.					
2) Assessment team confirms that the technical specifications of the technology employed in the project activity are updated in the MR by the PP.					
3) Assessment team confirms that previous monitoring report and Verification report has been submitted to the VVB.					
4) Assessment team confirms that the proper description of the PD referred, i.e. JOINT PD-MR RoCP in the MR.					
5) Assessment team confirms that the procedures used for handling any internal auditing performed at the site, and emergency preparedness have been updated by PP required as per VCS MR template version 4.2.					
6) DISCOM name has been elaborated by PP in the Appendix of MR.					
Hence VKU's assessment team confirms that CAR#03 is closed.					

Type	Date	14-October-2022
CAR#04	Reference	Section of VER Protocol: Section 04 & 05 (ER SHEET) /DR/OSV/AT
Description of the Non Conformance		
1) Please add version number and date of submission in the ER sheet. 2) PP is requested to mention separate Import values as per B-forms/Invoices and in a separate section show the application of 115% of transmission loss on the import (Formula used to be entered and shown in ER) PP to also mention clarification in MR & ER about the application		

of transmission loss of 115% on IMPORT Invoices only and not in B-Forms.					
3) PP is requested to mention the source of the values entered in the General data and ER tab of ER sheet.					
4) PP is requested to please enter formula in the Transmission losses column to maintain transparency about calculations in General data tab of ER sheet.					
5) PP to mention that following the conservative approach values of B-Forms are referred in the calculation for the emission reductions in column O of ER tab in ER sheet.					
1 st Response from PP			Date	14-September-2023	
1) The version number and date of submission in the ER sheet has been updated.					
2) The separate Import values as per B-forms/Invoices and in a separate section shows the application of 115% of transmission loss on the import (Formula used to be entered and shown in ER, has been updated, also mentioned clarification in MR & ER about the application of transmission loss of 115% on IMPORT Invoices only and not in B-Forms.					
3) The source of the values entered in the General data and ER tab of ER sheet has been updated					
4) Transmission losses column to maintain transparency about calculations in the General data tab of the ER sheet Has been updated.					
5) PP has updated that they follow the conservative approach values of B-Forms are referred to in the calculation for the emission reductions in column O of ER tab in the ER sheet.					
1 st Assessment by Audit Team		Status	Closed	Date	16-September-2023
1) Assessment Team confirms that the version number and date of submission in the ER sheet has been updated by the PP.					
2) Assessment team confirms that the separate Import values as per B-forms/Invoices and in a separate section shows the application of 115% of transmission loss on the import (Formula used to be entered and shown in ER, has been updated, also mentioned clarification in MR & ER about the application of transmission loss of 115% on IMPORT Invoices only and not in B-Forms.					
3) Assessment team confirms that the source of the values entered in the General data and ER tab of ER sheet has been updated by the PP.					
4) Assessment team confirms that the Transmission losses column has been added to maintain transparency about calculations in the General data tab of the ER sheet.					
5) Assessment team confirms that PP has made the required changes in the ER Sheet.					
Hence VKU's assessment team confirms that CAR#04 is closed.					

Description of Forward Action Requests raised by VVB:

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