



BUNDLED WIND POWER PROJECT IN RAJASTHAN BY ORANGE RENEWABLE POWER PRIVATE LIMITED

Document Prepared By



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Summary:

VKU Certification Pvt. Ltd. (hereafter referred to as VKU) has been commissioned by **Infinite Environment Solutions LLP** (hereafter referred Infinite Solutions) to verify greenhouse gas emission reductions reported for project activity “**Bundled Wind Power Project in Rajasthan by Orange Renewable Power Private Limited**” (VCS ID 1465¹) in India. This is the seventh periodic verification of monitoring period i.e., from **01-May-2020 to 30-March-2023 (Inclusive of both start and end dates)** under first crediting period i.e., from **31-March-2013 to 30-March-2023 (Inclusive of both dates)**.

Purpose of verification: The objective of 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 monitoring methodology is aligned with the plan outlined in the registered VCS PD /3/, and that the monitoring data used to confirm reductions in greenhouse gas emissions from sources is comprehensive, definitive and transparently presented.

The verification scope of the project is:

- To verify that the project is implemented as described in the registered VCS PD/3/.
- To evaluate the project's adherence to relevant regulations, including the legislation of the host country (India)
- To verify the implementation and functionality of monitoring system, ensuring generation of Verified Carbon Units, without any instances of double counting.
- To verify 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 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 4.5/9/, VCS Validation and Verification Manual version 3.2/10/, CDM M&P, the latest version of the CDM Validation and Verification Standard 3.0/11/, 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, the resolution of outstanding issues and the issuance of the final verification report and certification. This

¹ <https://registry.terra.org/app/projectDetail/VCS/1465>

comprehensive verification is aimed to ensure that reported emission reductions are thorough and precise, aligning with relevant VCS requirements, thus enabling the project to obtain certification.

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

During this seventh verification of first crediting period, a total of **(05)** findings were identified, comprising of **(02) Corrective Action Request (CARs); (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.

Verification team ensured that the reported emission reductions are complete and accurate by verifying 100% of the data, along with the supporting documents and evidences. This was performed during desk review and also by conducting personnel interviews and focussed group discussions during site visit to project. Verification of data has been carried out in accordance with applicable VCS requirements, therefore the assessment team has detected no further uncertainties.

The GHG emission reductions have been calculated based on the approved methodology ACM0002, Version 16.0: Grid-connected electricity generation from renewable sources /12/ and the monitoring plan included in the registered VCS PD (version 02) of dated 25-March-2015/3/

Verification Conclusion:

Based on VKU's thorough assessment, it is their professional judgment that the project activity "Bundled Wind Power Project in Rajasthan by Orange Renewable Power Private Limited" (VCS ID 1465) fully complies with the applicable requirements of VCS standard version 4.5 /9/ and associated guidelines. The project has successfully implemented the designated baseline and monitoring methodology outlined in ACM0002: Grid-connected electricity generation from renewable sources-Version 16.0 /12/.

The monitoring system in place is effective and reliable, ensuring a reasonable level of assurance 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 **264,474 tCO₂e** during the seventh verification for monitoring period, which spans from **01-May-2020 to 30-March-2023 (Inclusive of both start and end dates)** of first crediting period (31-March-2013 to 30-March-2023; Including both dates). This certification affirms the project substantial contributions towards mitigating greenhouse gas emissions.

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1 INTRODUCTION

1.1 Objective

Infinite Environment Solutions LLP (hereafter referred to as Infinite Solutions) commissioned M/s VKU Certification (here after referred as VKU) to carry out seventh periodic verification of the project “Bundled Wind Power Project in Rajasthan by Orange Renewable Power Private Limited” (VCS ID 1465) in India for the period from 01-May-2020 to 30-March-2023 (Inclusive of both start and end dates) under first crediting period i.e., from 31-March-2013 to 30-March-2023 (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 /9/ and GHG program applied, on the basis of the registered VCS PD version 02 dated 25-March-2015/3/.

This is the seventh verification of **first crediting period (31-March-2013 to 30-March-2023)**, (Inclusive of both dates) for a period of thirty-five months or 1065 days i.e., from 01-May-2020 to 30-March-2023 (Inclusive of both start and end dates). The project activity adopts renewable crediting period of 10 years which can be renewed twice as mentioned in section 1.6 of VCS PD version 02 dated 25-March-2015/3/.

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

Periodic Verification No.	Monitoring Period	Number of years
Validation	Validation Dated: 30-March-2015 (31-March-2013 to 30-March-2023), (Inclusive of both dates)	10 Years
1 st VCS Verification	<u>31-March-2013 to 31-March-2015</u>	2 years 01 day
2 nd VCS Verification	<u>01-April-2015 to 31-March-2016</u>	1 year
3 th VCS Verification	<u>01-April-2016 to 31-March-2017</u>	1 year
4 th VCS Verification	<u>01-April-2017 to 31-March-2018</u>	1 year
5 th VCS Verification	<u>01-April-2018 to 30-April-2019</u>	1 year 1 month
6 th VCS Verification	<u>01-May-2019 to 30-April-2020</u>	1 year
7 th (Current Monitoring Period) in VCS	01- May-2020 to 30-March-2023	2 years 10 months 30 days
Total Duration	31-March-2013 to 30-March-2023	10 Years

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

- The project activity has been implemented and operated in strict adherence to the registered VCS PD version 02 dated 25-March-2015 /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: Grid-connected electricity generation from renewable sources-- version 16.0 /12/ 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/29/. 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 "Bundled Wind Power Project in Rajasthan by Orange Renewable Power Private Limited". The verification of this project was based on the validated & registered VCS PD version 02 dated 25-March-2015/3/ & 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 Team were reviewed against the following guidance & protocols:

- i) VCS Programme Guide (Version 4.4) /8/
- ii) VCS Standard (Version 4.5) /9/
- iii) VCS Program Definitions (Version 4.4) /6/
- iv) VCS Registration & Issuance Process (Version 4.4) /7/
- v) VCS validation and verification manual version 3.2/10/
- vi) CDM Approved methodology ACM0002 Version 16.0 /12/
- vii) Tool to calculate the emission factor for an electricity system (Version 04.0)/19/
- viii) Tool for the demonstration and assessment of additionality, Version 07.0.0/20/
- ix) CDM Validation and Verification Standard version 3.0/11/

The steps involved are as follows:

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

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

The verification method and criteria encompassed several phases, including

- (i) Desk review of VCS Project Description, registered under (Version 02) dated 25-March-2015/3/ and other supporting documents listed in **Table-04;**
- (ii) Onsite interviews & Focussed Group Discussions with Stakeholders & PP representatives involved in project's implementation.
- (iii) VKU's Completeness/Quality Check, and
- (iv) The Final issuance of the verification report.

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

It is important to note that the verification/Assessment team are not involved in 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 4.5/9/.

The verification report is based on the Monitoring report/1/, registered VCS PD version 02 dated 25-March-2015/3/ & supporting documents that were made available to the VKU's assessment team references in table-04 and information collected through performing interviews with PP Representatives/Local Stakeholders during on-site visit /38/

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	First Name
VCS Team Leader & Technical Expert TA 1.2 (Local Expert- Country: India)	Kumar	Barun
Validator/Verifier	Kaushik	Niharika
Project Trainee	Dhankar	Anil

Table No 03: The Technical Reviewer Team comprises of:

Role/Qualification of Technical Team	Last Name	First Name
Technical Reviewer & Technical Expert TA 1.2	Kathuria	Sunil

1.4 Summary Description of the Project

Project Overview:

This bundled Project entails installation & operation of 32 Wind Turbine Generators (WTGs) of total capacity 59.4 MW_(AC) (39.9MW in Bhesada & 19.5 MW in Dalot) in state of Rajasthan India, executed by Orange Renewable Power Private Limited & Orange Jaisalmer Wind Energy Private Limited of which the "Orange Renewable Power Private Limited" is the representative of this bundled project activity. The primary objective of this undertaking is to generate clean electricity with utilization of renewable wind energy. This bundled project entails two projects ("Project-1" & "Project-2") executed by two different PPs.

Project 1 is executed by Orange Jaisalmer Wind Energy Private Limited with the installation of 19 WTGs of 2.1 MW rating of Suzlon S88 make and total capacity 39.9 MW at Bhesada site in District: Jaisalmer of State: Rajasthan, Country: India.

Project 2 is executed by Orange Renewable Power Private Limited with the installation 13 WTGs of 1.5 MW rating of ReGen V82 make and total capacity 19.5 MW at Dalot site in District: Pratapgarh of State: Rajasthan, Country: India.

Start date of the project activity is the earliest date of interconnection with the grid i.e., 31-March-2013. This is the date of commissioning of 32 WTGs of this bundled Project activity by Orange Renewable Power Private Limited. The entire project is in continuous operation since its date of commissioning. The details of commissioning dates of the individual project activity are mentioned in the section 4.1 of this report.

Energy Source:

This bundled project activity utilizes wind energy to generate electricity through its 32 WTGs (Total capacity of 59.4 MW_{AC}). The generated electricity is seamlessly integrated into the Unified Indian Grid. Notably, this generation of energy abstains from utilizing fossil fuels, ensuring absence of greenhouse gas emissions. Consequently, this project contributes positively to environment by producing sustainable power without adverse ecological effects.

Project Nature:

The project is categorized as a Greenfield facility, signifying its new and innovative character. The electricity generated by this endeavor is exclusively earmarked for export to the Indian electricity grid.

The Project activity is a new facility (Greenfield) and the electricity generated by the project will be exported to the Indian electricity grid. The project will therefore displace an equivalent amount of electricity which would have otherwise been generated by fossil fuel dominant electricity grid. The Project Proponent thus plans to avail (VCS) benefits for this initiative. These benefits encompass recognized credits for the reduction of greenhouse gas emissions, underscoring the project's commitment to environmental sustainability.

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

Baseline/Source	Generation of electricity by fossil fuel- dominated grid connected power plants
Project Equipment/Sink	Avoidance of GHG emission into the atmosphere is due to generation of electricity by renewable means i.e., Wind Turbine Generators (WTGs) of this project and exporting to Unified Indian Grid which is in line with 3.1.1 of ISO:14064 part -2

	Renewable Energy Projects do not create sinks, they avoid emissions through their technology i.e., Through installed Wind Power Project.
Baseline GHG emission source reduced/avoided	CO ₂ emissions from fossil fuels and other fuel fired grid connected plants/projects.

The entire project is in continuous operation since its date of commissioning of the wind power project, as witnessed by the assessment team during onsite visit. It has been also verified against the registered VCS PD/03/ previous Verification report /05/ and commissioning certificates/30/. Above documents have been submitted by PP in response to the feedback raised as a CL#02. As per section 3.26 and clause 3.26.3 of the VCS Standard version 4.5/09/ 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 4.5/09/ conforms that the capacity of the project. by verifying it during on site visit by cross checking the certificates/name plates of the WTGs installed at site & while interviewing the site personnels, and hence declare that the project capacity is in line with the defined methodology ACM0002 version 16/12/ & registered VCS PD Version 2.0 of dated 25-March-2015/3/.

The net electricity generated by the project activity that was evacuated to the grid during the current monitoring period (7th monitoring period) from 01-May-2020 to 30-March-2023 (inclusive of both the dates) is **270,812.65 MWh**. The total emission reductions achieved in this monitoring period is **264,474 tCO₂e**.

2 VERIFICATION PROCESS

The registered VCS project "Bundled Wind Power Project In Rajasthan By Orange Renewable Power Private Limited" ([VCS ID 1465](#)) is undergoing seventh periodic verification of first crediting period under VCS with VKU Certification Pvt Ltd from 01-May-2020 to 30-March-2023, both dates inclusive. The first crediting period start from 31-March-2013 to 30-March-2023 (both dates included).

The following sections describe the approach that has been adopted to ensure the quality of emission reductions

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 /9/. The project activity is a bundled project activity and does not fall under category "grouped projects", hence no sampling methods was employed by the assessment team and during onsite visit /38/ assessment team reviewed 100% data for all the Wind Turbine Generators involved in this project at site for the verification of GHG emission reductions or removals generated by the project.

- The GHG emission reductions are based on the approved Baseline and monitoring methodology ACM0002 "Grid-connected electricity generation from renewable sources" Version 16.0 /12/
- Scope: 01 - Energy Industries (renewable /non-renewable sources)
- Project type: Type I - Renewable energy projects.
- This is a bundled project activity.
- 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 04.0.0 /19/

Keeping in line with ISO (14064-3; 2019, clause 06 & 14065-2020, clause 09) Standard guidelines assessment team has framed down the process for completing the verification and has followed the same throughout the execution of audit of the said project [VCS 1465](#).

The verification consisted of the following phases.

- 1. Planning and Intimation to VERRA about site visit:** The assessment team plans the GHG-programme site visit and starts with a desk review. Assessment team also shared a NOVS [Notice of Validation/Verification Services \(NOVS\)](#) Form /42/ and submit it to auditing@verra.org ,15 business days before the initial meeting with the project proponent. The form for this project was shared on 25-May-2023 and confirmation for conducting site visit was received from VERRA on 27-May-2023 /38/ Decision to take site visit was based

- on independent risk assessment, as defined in section 4.1.13 of VCS standard version 4.5/09/ and site visit dates finalised were 14-June-2023 & 16-June-2023. More details are provided in [section 2.4](#) of this report.
2. **Strategic Analysis:** Assessment team performed strategic analysis to understand the activities and complexity of the project, and to determine the nature and extent of the verification activities. The results of the strategic analysis shall be used in the risk assessment.
 3. **Risk Assessment;** Assessment team performed risk assessment in a dedicated form defined by VKU 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 in a dedicated form defined by VKU, to collect sufficient and appropriate evidence upon which the conclusion shall be based. It will also determine whether the GHG statement conforms to the criteria, taking into account the principles of the standards or GHG programme that apply to the GHG statement.
 5. 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. /41/
 7. **Evidence Gathering Plan;** The evidence-gathering plan is prepared in a dedicated form defined by VKU & 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 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 “Bundled Wind Power Project In Rajasthan by Orange Renewable Power

Private Limited” version 1.0 of 22-April-2023 and version 2.0 of 11-October-2023 and **final version 03 dated 25-October-2023** /1/ and the emission reduction calculations spreadsheet version 1.0 of 22-April-2023 and **final version 2.0 of 11-October-2023** /2/. In addition, the registered VCS PD version 02 dated 25-March-2015/3/ has been specifically referred for baseline estimations and the monitoring plan for the project. 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 4.5/9/ it is an obligation for the project proponent to make available to the assessment team the required supporting documents and data needed to support statements and data as documented in the monitoring report. Thus, the assessment team reviewed the following documents during verification:

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

Current Verification Reference Documents	
/1/	VCS monitoring report for “Bundled Wind Power Project In Rajasthan by Orange Renewable Power Private Limited” in India, - Version 1.0 of 22-April-2023 - Version 2.0 of 11-October-2023 - Version 3.0 of 25-October-2023
/2/	Emission Reduction Calculation Spreadsheet, for “Bundled Wind Power Project In Rajasthan by Orange Renewable Power Private Limited” in India - Version 1.0 of 22-April-2023 - Version 2.0 of 11-October-2023
Background Documents/Weblinks	
/3/	<u>Registered VCS PD for the project ‘Bundled Wind Power Project In Rajasthan By Orange Renewable Power Private Limited’ version 2.0 dated 25-March-2015</u>
/4/	<u>TÜV Rheinland (China) Ltd: Validation Report for the project ‘Bundled Wind Power Project In Rajasthan By Orange Renewable Power Private Limited’ version 2.0 dated 30-March-2015</u>
/5/	<u>LGAI Technological Center, S.A (Applus+ Certification): Verification Report for the project ‘Bundled Wind Power Project In Rajasthan by Orange Renewable Power Private Limited’ version 2.0 dated 27-July-2020</u>
/6/	<u>VCS program Definitions (Version 4.4) of 29-August-2023</u>
/7/	<u>VCS Registration & Issuance Process (Version 4.4) of 04-October-2023</u>
/8/	<u>VCS: VCS Program Guide, version 4.4 of 29-August-2023</u>
/9/	<u>VCS: VCS Standard, version 4.4 of 17-January-2023</u> <u>VCS Standard, version 4.5 dated 04-October-2023 (Latest)</u>
/10/	<u>Validation and verification manual version 3.2 dated 19-October-2016</u>

/11/	<u>CDM Validation and Verification Standard version 3.0 dated 09-September-2021</u>
/12/	<u>CDM Executive Board: Baseline and Monitoring Methodology "ACM0002: Grid-connected electricity generation from renewable sources- version 16.0</u>
/13/	<u>VERRA: Project search</u>
/14/	<u>UNFCCC: Project search</u>
/15/	<u>Renewable Energy Certificate Registry of INDIA - Registered RE Generator List (recregistryindia.nic.in)</u>
/16/	<u>I-REC Standard - The International REC Standard Foundation (irecstandard.org)</u>
/17/	<u>Gold Standard Foundation</u>
/18/	<u>EIA NOTIFICATION dated 14-September-2006</u>
/19/	<u>Tool to calculate the emission factor for an electricity system, Version 04.0</u>
/20/	<u>Tool for the demonstration and assessment of additionality, Version 07.0.0</u>
/21/	<u>CO2 Baseline Database for the Indian Power Sector</u>
/22/	Central Electricity Authority (Installation and Operation of Meters) Regulations Notified on 17-March-2006 No. 502/70/CEA/DP&D Amendments Notified on 26-June-2010 No. 502/6/2009/DP&D/D-I https://cea.nic.in/wp-content/uploads/2020/02/meter_reg.pdf <u>Metering Regulations Archives - Central Electricity Authority (cea.nic.in)</u>
Reference/Supporting documents submitted by PP to VVB	
/23/	Power Purchase Agreement between Orange Jaisalmer Wind Energy Pvt. Ltd. & Suzlon Energy Limited and Jodhpur Vidyut Vitran Nigam Limited Dated 21-March-2013 for 50.4 MW (24*21) MW Wind Power Plant in Jaisalmer. Amendment Letter from RDPPC Superintending Engineer to Orange Jaisalmer Wind Energy Pvt. Ltd for capacity change from 50.4 to 39.9 MW Power Purchase Agreement between Orange Renewable Power Pvt. Ltd. & Renewable Energy Generation Private Limited and Jaipur Vidyut Vitran Nigam Limited Dated 21-March-2013 for 19.5 MW Wind Power Plant at Pratapgarh.
/24/	Certificates of Calibration for all the energy meters for the project activity active during current monitoring period (01-May-2020 to 30-March-2023, inclusive of both start and end dates) Calibration is carried out by M/s DARSH CALIBRATIONS PVT. LTD Calibration Certificate for • RJB90214 (Main Meter) (GSS END) dated 23-January-2020 • RJB90215 (Backup Meter) (GSS END) dated 23-January-2020

	Calibration Certificate for - RJB78194 (Main Meter) (Feeder-3) (PSS END) dated 12-April-2020 - RJB78200 (Backup Meter) (Feeder-3) (PSS END) dated 12-April-2020 - RJB78201 (Main Meter) (Feeder-4) (PSS END) dated 12-April-2020 - RJB78203 (Backup Meter) (Feeder-4) (PSS END) dated 12-April-2020 Calibration Certificate for Pratapgarh Site at GSS 132kV RJB79226 (Main Meter) (GSS END) dated APMB3516 (Backup Meter) (GSS END) dated
/25/	O & M (Service Agreement) between 1) Orange Jaisalmer Wind Energy Private Limited” (OJWEPL) and Suzlon Global Services LTD 2) Orange Renewable Power Private Limited” (ORPPL) and ReGen Power Tech Private Limited
/26/	JMRs Issued by RRVNPL (Rajasthan Rajya Vidyut Prasaran Nigam Limited) to PP and O&M Contractor
/27/	Invoices issued by PP to DISCOM
/28/	Share Certificates provided by O&M Contractor to PP
/29/	Letter of declaration dated from PP regarding not having created or sought any other form of environmental credit for the current verification period (01-May-2020 to 30-March-2023, inclusive of both start and end dates)
/30/	Commissioning Certificates of all 32 Machines (Wind Turbine Generators) of the project activity issued by State Discom (RRVNL).
/31/	Technical Specifications of Wind Turbine Generators (WTGs) of “Bundled Wind Power Project in Rajasthan by Orange Renewable Power Private Limited” project as specified by manufacturers ReGen Power Tech Private Limited & Suzlon energy private limited.
/32/	Grievance Register present on project implemented site; more information related to the same has been included in Section 4.2.2 of this report
/33/	Tripping/Breakdown Details
/34/	Monthly Generation Reports/PLF Details
/35/	Training Records
VVB Documents used during Current Verification	
/36/	GPS Google earth software used for Location; Google Earth
/37/	GPS Map Camera: Geotag Photos & Add GPS Location
/38/	Onsite visit on 14-June-2023 to Project implemented site i.e. Village: Luna Kala, Naya Luna kala & Motisar of District- Jaisalmer of State- Rajasthan in Country- India.

	Onsite visit on 16-June-2023 to Project implemented site i.e. Village: Ambirama of District- Pratapgarh of State- Rajasthan in Country- India. On-site Visit Photographs/Evidences
/39/	Personnel Interviews and Focussed Group Discussions during onsite visit dated 14-June-2023 and 16-June-2023 detailed in <u>section 2.3</u> of this report
/40/	VKU-Attendance Sheet of Onsite Audit_ VKU.VER.102.23_VCS_1465
/41/	VKU-Audit and Sampling Plan_ VKU.VER.102.23_VCS_1465
/42/	Notice of Validation/Verification Services (NOVS) Form- VCS_1465
/43/	<u>ISO 14064-3:2019: Greenhouse gases – Part 3: Specification with guidance for the verification and validation of greenhouse gas statements</u>
/44/	<u>ISO 14065:2020: General principles and requirements for bodies validating and verifying environmental information</u>
/45/	<u>ISO/IEC 17029:2019: Conformity assessment – General principles and requirements for validation and verification bodies</u>

2.3 Interviews

An on-site inspection/38/ was performed by the VKU assessment team. The representatives of the PP were interviewed personally by assessment team on 14-June-2023 & 16-June-2023; i.e., Tables 05 & 06 provide a comprehensive overview of the onsite interview process/39/ conducted during the verification. 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. Key personnel interviewed during the opening meeting and closing meeting session of the onsite audit, and the main topics of the interviews are summarized in the table below:

Table no: 05: Details of Personnel Interview

S.no	Name	Gender	Designation	Topic of Discussion
1	Abdul Jahid	Male	Greenko Group Position DM	Implementation of the project, Baseline emission, Emission reduction calculation, technical description of the project and monitoring along with QA/QC
2	Ravindra Mishra	Male	Suzlon Assistant Manager	
3	Bharat	Male	Suzlon Assistant Manager	SCADA, Breakdown details and maintenance of generation records Data recording,

4	Chandrapal Udawal	Male	Suzlon Staff	management and archiving procedure
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The topics covered during interview ranges from general features and implementation of project to technical details of the project like calibration details, monitoring and measuring system and data collection, recording, emergency procedures and archiving procedures. The assessment was based on the feedback received during onsite interview/39/ coupled with the documentation.

During Onsite Visit/38/, Assessment team also interviewed the local stakeholders/39/ 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/39/ 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	Manohar Lal	Male	Office Boy Luna Kala village	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.	Girdhar Gopal	Male	Driver Madasar village		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.

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

2.4 Site Visits

Site Location visited:

An On-site visit has been planned & undertaken by the assessment team to the project location identified in the MR/1/ at Location: Decision to take site visit was based on independent risk assessment, as defined in section 4.1.13 of VCS standard version 4.5/09/

On-site visit was conducted on 14-June-2023 to three villages, Luna Kala, Naya Luna kala and Motisar of District Jaisalmer and on 16-June-2023 to village Ambirama of District ; Pratapgarh in state of Rajasthan, India (WTGs location along with longitude and latitude is mentioned in [section 4.1](#) of this report), to carry out following:

- An assessment of the implementation and operation of the registered project activity as per the registered VCS PD version 02 dated 25-March-2015/3/ and VCS MR/1/.
- A review of information flows that have been used to generate, aggregating and reporting the monitoring parameters.
- Interviews/39/ with relevant personnel to determine whether the operational and data collection procedures are implemented in accordance with the monitoring plan in the registered VCS Project Description (PD) version 02 dated 25-March-2015/3/.
- A cross check between information provided in the monitoring report and data from other sources such as WTG log books, Invoices, JMRs, Share Certificates, Calibration certificates of energy meters etc
- A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the VCS PD version 02 dated 25-March-2015/3/, applied methodology including applicable tool(s), and wherever applicable, the applied standardized baseline.
- A review of calculations and assumptions made in determining the GHG data and emission reductions.
- An identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.

2.5 Resolution of Findings

The aim of this verification phase is to address any remaining issues that require clarification to enable VKU to reach a favourable conclusion regarding project description. In the interest of transparency, a customized verification protocol has been developed specifically for this project. This protocol transparently outlines the requirements, methods of verification and the outcomes of verifying the specified criteria. The verification protocol 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 impact 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, Assessment team has documented a summary of total **05 Findings** that include, **(00 FARs, 03 CLs and 02 CARs)** were raised during this verification which were closed successfully and details are provided under Appendix B of this report.

2.5.1 Forward Action Requests

Based on the review of the VCS Validation Report/11/ and previous VCS Verification Report /12/ 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-May-2020 to 30-March-2023; Inclusive of both start and end dates).**

2.6 Eligibility for Validation Activities

VKU has not undertaken any validation activities as part of the verification 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 focussed group discussions and interview with the Project Proponent (PP), as documented during the site visit.

Assessment team assessed the VERRA's website at the time of submission 26-October-2023: <https://verra.org/validation-verification/vku-certification-pvt-ltd/#vcs> wherein the scope of services of VKU certification Pvt. Ltd. is mentioned as verification and not validation.

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

Project's GHG Program Status:

The project has exclusively applied for registration under the Verified Carbon Standard (VCS) with ID: 1465. This sole registration status has been confirmed through rigorous scrutiny of the VERRA registry website. A similar comprehensive search was conducted across the CDM (Clean Development Mechanism), GS (Gold Standard), GCC (Global Carbon Council) and UCR (Universal Carbon Registry) etc registries, using matching project titles and capacity, as well as Project Proponent details. This diligent examination did not yield any instances of the project being registered under any of the aforementioned registries or any comparable mechanisms

Verification through Declaration:

The Project Proponent (PP) has substantiated this single-registration claim through the declaration /29/ submitted, affirming that the GHG emission reductions achieved by the project during the current monitoring period will not be sought or claimed under any other registries apart from VCS.

Cross-Verification of GHG Benefits:

An independent search was also conducted to ascertain whether the project had been registered or claimed for other GHG-related benefits, such as Renewable Energy Certificates (RECs) and International Renewable Energy Certificates (I-RECs). This thorough assessment, coupled with the declaration submitted by the PP, corroborates that there is no double counting of GHG benefits arising from this project activity for the current monitoring period.

Issuance Records Confirmation:

The assessment team further corroborated this by cross-checking the issuance records available on the VERRA website. This cross-verification process unequivocally confirmed that the emission reductions generated by the project activity have not been, double counted, thus warranting acceptance by the assessment team. The assessment team has also cross-checked the issuance records (of the VCUs issued during last verification) available on the Verra website and thus confirmed & ensured that the emission reduction generated from the project activity. The weblink for the same has been referenced in the link table below.

Non-Rejection by Other GHG Programs:

The project's non-rejection status by other GHG programs has also been confirmed through a meticulous assessment. A declaration /29/ attesting to this fact was duly verified and found to be accurate by the assessment team. Additionally, an independent verification process was

initiated with other relevant registries, which substantiated that there were no instances of project rejection by these entities.

In conclusion, the project's exclusive registration under VCS for the current monitoring period, along with its absence from rejection lists of other GHG programs, has been comprehensively verified, ensuring the integrity and credibility of its GHG benefits claims. 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)
- 6) <https://cri.nccf.in/>
- 7) [International Carbon Registry - International Carbon Registry](#)
- 8) [GCC PROJECTS PORTAL \(globalcarboncouncil.com\)](#)
- 9) [VCU Issuance Records](#)
- 10) <https://biocarbonregistry.com/en/projects/>
- 11) https://wilder.earth/social_carbon
- 12) <https://www.ucarbonregistry.io/>
- 13) <https://www.ecoregistry.io/>
- 14) (<https://www.carbonregistry.com/explore/projects>)
- 15) (https://wilder.earth/social_carbon)
- 16) Cercarbono registry (<https://www.ecoregistry.io/>)

3.2 Methodology Deviations

No instances of methodology deviation have been identified throughout the current monitoring period from 01-May-2020 to 30-March-2023 (Inclusive of both start and end dates), signifying the adherence and compliance of the project to the prescribed methodologies. Furthermore, it is noteworthy that no methodology deviations were observed as confirmed from the approved VCS Validation report /04/ and previous VCS Verification report/05/, affirming the project's steadfast commitment to upholding the designated methodologies and ensuring accurate and reliable results.

3.3 Project Description Deviations

There are no Project description deviations applied during current monitoring period i.e., 01- May-2020 to 30-March-2023 (Inclusive of both the days).

In first monitoring period, spanning from 31-March-2013 to 31-March-2015 (inclusive of both days) the following three deviation was reported during the previous monitoring periods and will be considered in subsequent verifications. Description of the deviation and the assessment on conservativeness of the deviations is provided below.

Deviation 1: In first monitoring period, Spanning from 31-March-2013 to 31-March-2015 (inclusive of both days), a deviation was recorded due to non-availability of exact calculation for Net Electricity ($EG_{\text{facility},y}$). The registered Project Description (PD) provided a simplified explanation of the monitoring method for Net Electricity ($EG_{\text{facility},y}$). It stated that $EG_{\text{facility},y}$ would be calculated based on the difference between "export", "import" and "transmission loss", however, the PD did not explain the exact method of calculations. In the first monitoring report the detailed method of calculating ($EG_{\text{facility},y}$) has been described under section 3.3 “Monitoring Plan” (Now section 4.4 of this report).

Deviation 2: The registered PD also described the source of data to be “JMRs”, which is correct. However, it has been clarified that the source of data is JMR along with “share certificate” provided by the O&M contractor. The above change in no way impact the project’s Additionality, Baseline and applicability of methodology.

Deviation 03: In addition to the above, the registered project description stated that the voltage of the substation is 220kV, but this was corrected in the MR. The voltage of OJWEPL PSS is 220kV, OJWEPL GSS is 400kV, and ORPPL GSS is 132kV. This change in description does not affect the project's Additionality, Baseline, and methodology applicability in any way.

Assessment team’s remark.

It is important to highlight that apart from this approved deviation, there have been no other significant changes to the project activity. The VKU assessment team verified the previous verification reports, Certificate of Incorporation uploaded on the [Verra Webpage](#) and [PRR report dated 11-May-2018](#), which justified the correctness of the requested deviation, and consequently, the team found it acceptable.

The verification team has acknowledged and accepted the deviation, affirming that the project remains fully compliant with the VCS rules. Furthermore, it is important to note that this deviation has no impact on the applicability of the methodology, the concept of additionality, or the appropriateness of the baseline scenario. The project continues to meet all relevant requirements and remains in adherence with VCS guidelines.

The VKU Assessment Team conducted an assessment of source of data, voltage at substation & pooling substation and for calculation used to derived the net electricity supplied by the project activity. During an onsite visit, they further verified the details of the voltage and calculation with

site personnel. These findings were corroborated by the previous monitoring report, as well as the PPA and JMRs. The VKU assessment team deems this information to be accurate and acceptable.

3.4 Grouped Project

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

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

Based on the on-site audit carried out in conjunction with the representative from the project proponent (PP), it was determined that the project is being executed in accordance with the requirements outlined in the registered VCS PD version 02 dated 25-March-2015/3/ and the approved monitoring plan. Kinetic Energy of wind is the main source of power generation. The project activity is step forward in harnessing kinetic energy of wind and further diffusion of the wind technology in the region. The project activity leads to the promotion and demonstrates the success of wind projects in the region which further motivate more investors to invest in wind power projects. Hence, the project activity leads to technological well-being.

The main purpose of this project activity is to generate clean form of electricity through renewable wind energy sources. The bundled project activity involves installation of 32 WTGs of total capacity of 59.4 MW_{AC} (39.9MW in Bhesada & 19.5 MW in Dalot) in two districts (Jaisalmer & Pratapgarh) of state Rajasthan in country India. Project Capacity has been verified through combined rating of 32 WTGs installed at project site/31/.

Project 1 is executed by Orange Jaisalmer Wind Energy Private Limited with the installation of 19 WTGs of 2.1 MW rating of Suzlon S88 make and total capacity 39.9 MW at Bhesada site in District: Jaisalmer of State: Rajasthan, Country: India.

Project 2 is executed by Orange Renewable Power Private Limited with the installation 13 WTGs of 1.5 MW rating of ReGen V82 make and total capacity 19.5 MW at Dalot site in District: Pratapgarh of State: Rajasthan, Country: India.

During the 10 years of first crediting period, the project will replace anthropogenic emissions of greenhouse gases (GHG's) estimated to be approximately 102,870 tCO₂e per year, by displacing 105,335 MWh/year amount of electricity from the generation-mix of power plants connected to the Indian grid, which is mainly dominated by thermal/fossil fuel-based power plant.

The project was fully commissioned on 31-March-2013 and operating smoothly with schedule maintenance at regular intervals /33/. The dates of commissioning were also verified by Assessment team during the onsite audit/38/ that there is no change in project design with reference to previous verification/05/and VCS standard version 4.5 /09/ in section 3.3 of the report. The project is implemented as per the description provided in the registered VCS PD /3/.

No unforeseen incidents or events occur that could significantly impact the operation of the project activity have been identified, with the exception of scheduled maintenance and service breakdowns. These breakdowns did not impact the project activity's reduction of greenhouse gas (GHG) emissions or the monitoring methodology employed. The % difference between ERs achieved during current MP & estimated ER for the MP is -11.80 % that is mainly accounted for

due to low seasonal PLF & scheduled & unscheduled downtime during the current monitoring period.

During this monitoring period, project activity experienced scheduled/unscheduled breakdowns amounting to **8,297.2 hours** for the purpose of plant maintenance and service.

This downtime is **1.02%** of total available hours of operation of the wind power project, during the current monitoring period.

Table no: 07: Breakdown Hours for the current Monitoring Period spanning from 01-May-2020 to 30-March-2023, including both days.

Year		Total Hours ²	Net operational Hours	Percentage of Net Operation Hours	Breakdown Hours	Percentage of Breakdown Hours
From	To					
01-May-2020	31-Dec-2020	188,160	1,85911	98.80%	2,249	1.20%
01-Jan-2021	31-Dec-2021	280,320	277,038.1	98.83%	3,281.9	1.17%
01-Jan-2022	31-Dec-2022	280,320	278,157.5	99.23%	2,162.5	0.77%
01-Jan-2023	30-March-2023	68,352	67,748.2	99.12%	603.8	0.88%
01-May-2020	30-March-2023	817,152	808,854.8	98.98%	8,297.2	1.02%

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

During onsite visit while interviewing the site personnel it was confirmed that the all WTGs was not entirely shut down during these breakdown hours; only the affected WTGs were temporarily taken out of operation. This information is consistent with the details mentioned in Section 3.1 and Appendix 2 of the MR/01/. 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 observed through breakdown log sheet records present on project site and tripping details for each month submitted to VKU Assessment Team by PP that the plant supplied 270,812.65 MWh of electricity, and thus contributing to 264,474 tCO_{2e} GHG reductions. The estimated emission reduction for this monitoring period as per registered VCS PD is 299,873 tCO_{2e}, whereas actual emission reductions achieved are 264,474 tCO_{2e}, which is -11.80% lower than the estimated emission reductions for the current verification period. Further explanation is provided [section 4.5](#) of this report

² (24 (Total Hrs in a day) * 32 (Total No. of WTGs of the project) * Days (For particular time Frame)

Figure 1: “Project – 1” implemented location verified and mapped down

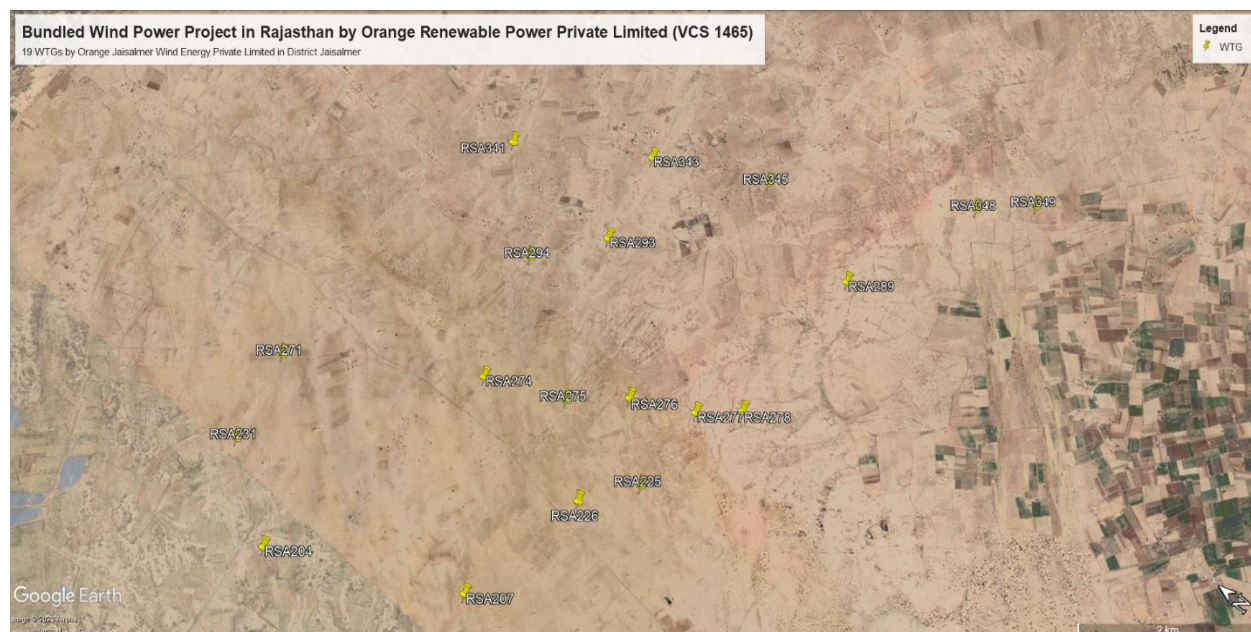
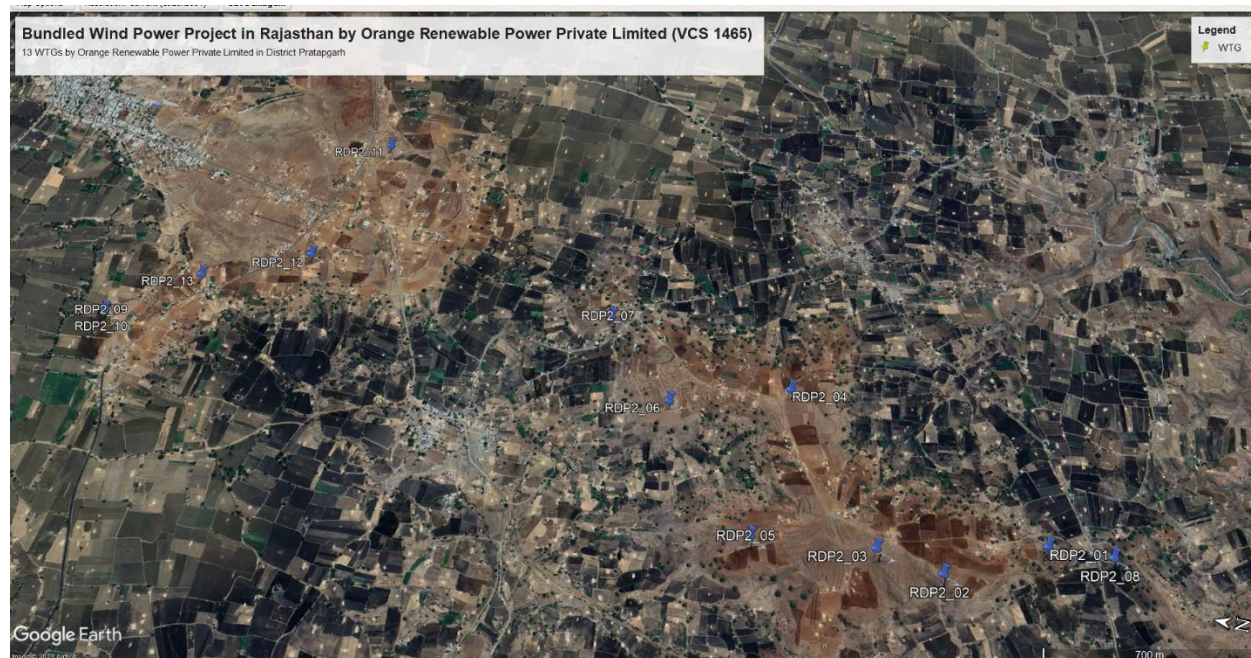


Figure 2: “Project – 2” implemented location verified and mapped down



The project location was verified by the assessment team through [Google earth pro/36/](#) during desk review and GPS map camera software during onsite visit /37/. Moreover, assessment team confirm that the latitude and longitude as mentioned in the registered VCS PD dated 25-March-2015/3/, VCS Validation Report/4/, VCS MR/1/

Table no 08: The commissioning dates of 32 WTGs (59.4 MW_{ac}), latitudes and longitudes are confirmed below:

1. "Project 1": Geo-coordinates of 39.9 MW Wind power project in Jaisalmer (Bhesada)

S.No	WTG No	Village	Taluk	District	Date of Commissioning	Latitude	Longitude
1	RSA204	Luna Kala	Pokaran	Jaisalmer	31-March-2015	26.6477	71.55631
2	RSA231	Luna Kala	Pokaran	Jaisalmer	31-March-2015	26.65686	71.56304
3	RSA271	Luna Kala	Pokaran	Jaisalmer	31-March-2015	26.65871	71.57321
4	RSA225	Naya Luna kala	Pokaran	Jaisalmer	31-March-2015	26.62153	71.58829
5	RSA226	Naya Luna kala	Pokaran	Jaisalmer	31-March-2015	26.62558	71.58246
6	RSA274	Naya Luna kala	Pokaran	Jaisalmer	31-March-2015	26.64083	71.58605
7	RSA275	Naya Luna kala	Pokaran	Jaisalmer	31-March-2015	26.63274	71.59008
8	RSA276	Naya Luna kala	Pokaran	Jaisalmer	31-March-2015	26.62773	71.59484
9	RSA277	Naya Luna kala	Pokaran	Jaisalmer	31-March-2015	26.62148	71.59838
10	RSA278	Naya Luna kala	Pokaran	Jaisalmer	31-March-2015	26.61782	71.60192
11	RSA289	Naya Luna kala	Pokaran	Jaisalmer	31-March-2015	26.61714	71.62101
12	RSA293	Motisar	Bhaniyana	Jaisalmer	31-March-2015	26.63957	71.60723
13	RSA294	Motisar	Bhaniyana	Jaisalmer	31-March-2015	26.64486	71.59981
14	RSA341	Motisar	Bhaniyana	Jaisalmer	31-March-2015	26.65391	71.60882
15	RSA343	Motisar	Bhaniyana	Jaisalmer	31-March-2015	26.64118	71.61789
16	RSA345	Motisar	Bhaniyana	Jaisalmer	31-March-2015	26.62983	71.62431
17	RSA348	Motisar	Bhaniyana	Jaisalmer	31-March-2015	26.61089	71.63743
18	RSA349	Motisar	Bhaniyana	Jaisalmer	31-March-2015	26.60612	71.64224
19	RSA207	Naya Luna kala	Pokaran	Jaisalmer	31-March-2015	26.62894	71.56688

2. "Project 2": Geo-coordinates of 19.5 MW Wind power project in Pratapgarh (Dalot)

S. No	WTG No	Village	Taluk	District	Date of Commissioning	Latitude	Longitude
1	RDP2_01	Ambirama	Arnod	Pratapgarh	31-March-2015	23.5622	74.837
2	RDP2_02	Ambirama	Arnod	Pratapgarh	31-March-2015	23.5653	74.8353
3	RDP2_03	Ambirama	Arnod	Pratapgarh	31-March-2015	23.5674	74.8357
4	RDP2_04	Ambirama	Arnod	Pratapgarh	31-March-2015	23.5708	74.841
5	RDP2_05	Ambirama	Arnod	Pratapgarh	31-March-2015	23.5713	74.8352
6	RDP2_06	Ambirama	Arnod	Pratapgarh	31-March-2015	23.5747	74.8396
7	RDP2_07	Ambirama	Arnod	Pratapgarh	31-March-2015	23.5773	74.8426
8	RDP2_08	Ambirama	Arnod	Pratapgarh	31-March-2015	23.5602	74.8371
9	RDP2_09	Ambirama	Arnod	Pratapgarh	31-March-2015	23.5946	74.8387
10	RDP2_10	Ambirama	Arnod	Pratapgarh	31-March-2015	23.5946	74.8387
11	RDP2_11	Ambirama	Arnod	Pratapgarh	31-March-2015	23.5872	74.8486
12	RDP2_12	Ambirama	Arnod	Pratapgarh	31-March-2015	23.5884	74.8428
13	RDP2_13	Ambirama	Arnod	Pratapgarh	31-March-2015	23.5919	74.841

The power rating of the WTGs has been verified with the name plates as well as with the technical specification's WTGs submitted to VKU Assessment Team by PP and also cross checked from the technical manual of the Manufactures/31/. The same could be verified from the VCS Validation Report/4/ Assessment team confirms that the technical parameters are consistent with the registered VCS PD / 3/. The major technical specifications are as follows:

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

Suzlon's wind energy technology by implementing S88 model 2100kW WTGs.

OPERATING DATA	
Rated power	2.1 MW
Cut-in wind speed	4m/s
Rated wind speed	14m/s
Cut-out wind speed	25m/s
50 years gust wind speed	59.5m/s
Hub height	80m & 100 m
Wind Class	IIA
Rotational Speed	15.1 - 17.7 rpm
ROTOR	
Pitch system	Electric drive with electric brake, gearbox, frequency converter & batteries.
Diameter	88m
Swept area	6,082m
Blade material type	Fiberglass / Epoxy
GENERATOR	
Type	Induction generator with slip rings, variable rotor resistance with Suzlon Flexi slip control system
Rated power	2,100 kW
Rated voltage	690 / 600V
Frequency	50 / 60Hz
Protection	IP54 & IP23 (for slip rings)
Cooling system	Air cooled (IC6A1A6)
Insulation	Class H
Slip control	Flexi-Slip providing slip up to 16.7%
BRAKING SYSTEM	
Aerodynamic brake	3 independent systems with blade pitching
Mechanical brake	Hydraulic disc brake, activated by hydraulic pressure
GEARBOX	
Type	3 stages (1 planetary & 2 helical)

Ratio	1:98.8 ($\pm 0.5\%$)
Nominal load	2,310 kW
YAW SYSTEM	
Type	Electric motors with brake, gearbox & pinion
Bearings	Friction bearing with gear rim
CERTIFICATIONS	
Design standards	GL 2003 with supplement 2004
Quality	ISO 9001:2008
TOWER	
Type	Tubular in 4 sections
TRANSFORMER	
Make	Suzlon Energy Pvt. Ltd.
Voltage	690/33kV
Rated Power	2.5 MVA

ReGen's wind energy technology by implementing V82model 1500kW WTGs.

POWER	
Rated power	1500 kW
Cut-in wind speed (10 min. mean)	3 m/s
Rated Wind Speed (10 min. mean)	approx 12.5 m/s
Cut-out wind speed (10 min. mean)	22 m/s
Survival wind speed	52.5 m/s
Generator	Variable Speed, Multi-pole Synchronous with Permanent Magnet Excitation
ROTOR	
Diameter	82
Swept area	5325 sq.m
Speed range (variable)	9 to 17.3 rpm
TOWER AND FOUNDATION	
Hub height	85 m
Design	Tubular, Four sections
Foundation type	Floating foundation
CONTROL AND SAFETY SYSTEMS	
Control of output	Pitch Regulation
Speed control	Variable, Micro-controller based

Low Voltage Ride Through (LVRT)	3 seconds
Primary brake system	Aerodynamic Brake, Single Pitch Control/triple redundant
Pitch System	Electromechanical, Maintenance Free Toothed Belt Drive (Patented)
Remote Monitoring	VPN, Visualization via web-browser
TYPE CLASSES	
Wind turbine type class	GL III A
TRANSFORMER	
Make	Kamath Pvt Ltd
Voltage	620/33kV
Rated Power	1.7 MVA

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 has been implemented as per the registered VCS PD /3/ and applied methodology ACM0002, Version 16 /12/. The organizational role and responsibility as mentioned in the registered VCS PD /3/ is followed onsite. Meters are calibrated as per calibration frequency in registered PD/3/. All the emergency preparedness as mentioned in MR/1/ are followed onsite and no discrepancies were found regarding the same.

❖ **Head Operations ORPPL & OJWEPL**

- Manage the project activity.
- Evaluating the GHG performance of the project activity.
- Addressing the grievance related to project activity.
- Conduct CSR Activities in the region.

❖ **O & M Head**

- Reviewing the monthly and annual generation statistics.
- Identifying the opportunities for future improvement.
- Addressing the grievance related to project site.
- Sends the monitored data to consultants for emission reduction calculations.

❖ **Site In-charge/ Technician/ Supervisor Organization:**

- Primarily collects data.
- Conducts regular testing and calibration of monitoring equipment.
- Monitors, records, reports, and archives data.
- Prepares credit statements.
- Implementation of corrective appropriate measures in case any discrepancies are identified in the reported parameters.

During on-site visit, VKU assessment team checked the monitoring procedure and confirmed that A fully functional Supervisory Control and Data Acquisition (SCADA) system is present at site to ensures seamless monitoring of the whole working of plant which is used for the continuous

monitoring of all the parameters. The authority and responsibility for registration, monitoring, measurement, reporting and reviewing of the data rests with the project participant.

Assessment team concludes the following:

- a) There are no material discrepancies between project implementation and the project description provided in the registered VCS PD Version 2.0 of dated 25-March-2015 /3/.
- b) The monitoring plan is implemented completely and monitoring system (i.e., process and schedule for obtaining, recording, compiling and analysing the monitored data and parameters) is appropriate.
- c) There are no material discrepancies between the actual monitoring system, and the monitoring plan set out in the crediting period of project description/3/ and the applied methodology/12/.
- 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 **13,223.7 tCO_{2e}**.
- e) The GHG emission reductions or removals generated by the project have not been included in any emissions trading program or any other mechanism that includes GHG allowance trading/29/.
- f) Complying with clause 3.24.5 of the VCS Standard version 4.5 Assessment Team confirms that the project has not received or pursued any other form of environmental credit, nor has it become eligible to do so since VCS Validation/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 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/38/ and found all the indicators to be effective and applicable for the project activity.

As per the VCS Standard Version 4.5³ 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

³ <https://verra.org/documents/vcs-standard-v4-5/>

demonstrate contributions to at least three SDGs by 20-January-2025". This is project's seventh periodic verification of crediting period for the Monitoring Period 01-May-2020 to 30-March-2023 (Inclusive of both start and end dates), Since this project is registered before 20-January-2023, so the Project Proponent (PP) must demonstrate contributions to at least three SDGs by 20-January-2025.

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

- **SDG no 7.2: (Renewable energy share in the total final energy consumption)**
- **SDG no 8.5; (8.5.1 Average hourly earnings of employees, by sex, age, occupation and persons with disabilities)**
- **SDG no 13.2 (13.2.1: Tonnes of greenhouse gas emissions avoided or removed)**

The project activity has implemented activities that results in 03 SDG Contributions; 7.2, 8.5.1 & 13.2

1. **7.2 i.e. (Renewable energy share in the total final energy consumption)** As a part of this project activity lifetime (233,065 + 101,584 + 97,728 + 92,273 + 109,805 + 102,900 + 270,812.65⁴ = 1,008,167.65) MWh Net renewable electricity has been exported to Indian grid that helps to strengthen the renewable energy share in the energy mix. VKU has referred previous verification report /05/ monitoring report for current monitoring period/1/ & emission reduction sheet/2/ which were cross checked from Share Certificates/28/ JMRs/26/ & Invoices/27/ submitted to the VKU Assessment Team for current monitoring period and thus found the above claimed renewable electricity supplied to Indian grid is correct.
2. **8.5 i.e. (8.5.1 Average hourly earnings of employees, by sex, age, occupation and persons with disabilities)** Project has contributed directly to achieve the SDG target, because the project activity has created 34 jobs. The same has been verified by the assessment team from the employment records/Attendance sheets submitted by the PP to the VVB and VKU found the above claimed SDG correct and deemed satisfactory.
3. **13.0 i.e. (Tonnes of greenhouse gas emissions avoided or removed)** Due to installation of this project activity i.e., wind power project activity PP has prevented the release of (227,611 + 99,205 + 95,440 + 90,107 + 107,230 + 100,491 + 264,474⁵ = 984,558) tCO₂ into the atmosphere till the end of current monitoring period i.e., 01-May-2020 to 30-March-2023 (Inclusive of both the days). It, proves that the project generates eco-friendly, GHG free power which contributes to sustainable development of the region. VKU Assessment Team has referred previous verification report /05/ monitoring report for current monitoring period/1/

⁴ Contribution of Renewable energy share in the total final energy consumption to current MP i.e., 7th Verification Period.

⁵ Contribution of Tonnes of greenhouse gas emissions avoided or removed to current MP i.e., 7th Verification Period.

& emission reduction sheet/2/ which were cross checked from Share Certificates/28/, JMRs/26/& Invoices/27/ submitted. VKU Assessment Team now conclude that the above claimed greenhouse gas emissions avoided or removal is correct for current monitoring period

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

There are no potential harmful socio-economic and environmental effects in the project activities. The project activity does not have any major adverse impacts on environment during its construction or operational phase. All necessary measures to handle impacts were found in place, which was confirmed during site visit /38/.

The project has implemented comprehensive training programs like Operation and Maintenance Training, fire safety training, Occupational safety, health & productivity, Behaviour Based Safety Training, Electrical Safety Training & Electrical safety, LOTOTO, Fire & Emergency Preparedness during current monitoring to ensure that staff members are equipped with the necessary skills and knowledge to carry out their roles effectively and ensure the proper monitoring of emission reductions. The training programs cover a range of topics to address various aspects of the project's operations. Plant helpers have received training in equipment operation, data recording, report writing, operation and maintenance, and emergency procedures, aligning with the requirements outlined in the monitoring plan. These trainings address specific technical aspects related to the project's operations and contribute to the overall safety and risk management protocols. Assessment Team verified these training records /35/ during onsite visit and confirmed while interview with the site personnel. The above stated information about training programs was rectified and found satisfactory. The plant site has a dedicated Team for conducting trainings and keeping their staff personnels in check for the plant.

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

Audit Type	Period (First and last days included)	Program	VVB Name	Number of years
Validation	First crediting period; 31-March-2013 to 30-March-2023	VCS	<u>TÜV Rheinland (China) Ltd.</u>	NA
1 st Verification	31-March-2013 to 31-March-2015	VCS	<u>EPIC Sustainability</u>	2 years 00 months 00 days
2 nd Verification	01-April-2015 to 31-March-2016	VCS	<u>KBS Certification Services Private Limited</u>	2 years 00 months 00 days

3rd Verification	01-April-2016 to 31-March-2017	VCS	<u>LGAI Technological Center S.A. (Applus+ Certification)</u>	1 years 00 months 00 days
4th Verification	01-April-2017 to 31-March-2018	VCS	<u>LGAI Technological Center S.A. (Applus+ Certification)</u>	1 years 00 months 00 days
5th Verification	01-April-2018 to 30-April-2019	VCS	<u>LGAI Technological Center S.A. (Applus+ Certification)</u>	1 years 01 months 00 days
6th Verification	01-May-2019 to 30-April-2020	VCS	<u>LGAI Technological Center S.A. (Applus+ Certification)</u>	1 years 00 months 00 days
7th Verification	01-May-2020 to 30-March-2023	VCS	VKU CERTIFICATION PVT. LTD.	2 years 10 months 30 days
Current Verification				
Total	31-March-2013 to 30-March-2023	VCS	— —	10 Years

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

4.2 Safeguards

4.2.1 No Net Harm

The project activity involves implementation of 32 WTGs (59.4 MW_{AC}) as a voluntary measure to strengthen the national grid of India through exploitation of wind power generation potential available to India and in accordance with the Ministry of Environment, Forest and Climate Change (MoEF&CC) Notification dated 14-September-2006 (S.O. 1533(E) ⁶, and exempted 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. As per section 3.4.1 of the report on “Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects” prepared by MNRE dated September-2013⁷, on “Environmental Impacts from wind farms”, the report clearly states that wind energy project activity operations do not result in direct air pollution, noise pollution. Please refer below web link for the same. [Draft report on use of non-conventional energy resources for Simhastha 2016 \(niua.org\)](#).

⁶ <http://www.environmentwb.gov.in/pdf/EIA%20Notification,%202006.pdf>

⁷ [Draft report on use of non-conventional energy resources for Simhastha 2016 \(niua.org\)](#)

Throughout the monitoring period, the project operation had no negative impacts on air, water, soil quality, surroundings, or socio-economic factors.

The plant has generated employment in the project implemented area & has created 34 jobs as quantified in the SDG 8.5. The use of wind energy as a renewable resource not only preserved natural resources but also promoted environmental well-being without any detrimental consequences for the local environment.

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

Furthermore, the project activity has positively impacted the local community by creating job opportunities during construction and operation phases, as verified through on-site interviews and visits by the VKU Assessment Team /39/.

4.2.2 Local Stakeholder Consultation

The project in question i.e., VCS 1465: “Bundled Wind Power Project in Rajasthan by Orange Renewable Power Private Limited” has undergone stakeholder consultation which is in compliance with the Verified Carbon Standard (VCS) and local regulations. Various stakeholder groups, including Representatives from PP, local villagers were engaged through multiple phases using methods such as focus group discussions and social mapping.

Stakeholder Engagement Overview:

The project, already registered under the VCS mechanism, conducted a Local Stakeholder Consultation during the validation stage. Here are the key details:

- **Invitation/Distributing Survey Forms:** 04-April-2014
- **Date of Meeting:** 19-April-2013
- **Location:** Project sites in Rajasthan

Stakeholder Meeting Highlights:

At the meeting, Orange Renewable Power Private Limited (Project Investor) provided an introduction to the climate mitigation project. Stakeholders were informed about the environmentally friendly wind power generation, which reduces greenhouse gas emissions. The benefits of the wind project, such as increased energy availability, improved power quality and employment opportunities for the local population (both skilled & unskilled labours), were also discussed.

Feedback Mechanisms:

To encourage continual improvement and stakeholder engagement following process has been implemented to receive comments from local stakeholders as well as communicate with them at periodic intervals.

Methods	Details	Reason for Selection
Communication Book or Register	Communication Register is maintained at Admin office at project site office. Any comments/inputs/grievance received shall be processed in line with the procedure.	The administrative office is located at the site office. Thus, it is appropriate publicly accessible location at which local stakeholders can provide their feedback on the project.
Process Book	Any comments/inputs/grievance received shall be processed in line with the procedure	The local stakeholders are informed about the Communication Register. Further, a public notice has been posted at the site informing the stakeholders about the communication procedure.
Telephone access	+91 9959556707	Phone number of the contact person is circulated and discussed in the stakeholder meeting
Internet/email access	muraliraju.m@greenkogroup.com	Email ID of the contact person is circulated and discussed in the stakeholder meeting.

This Communication Book or Register for stakeholders allows them to provide feedback, voice complaints, with genuine concerns promptly addressed, ensuring transparency and accessibility.

Current Monitoring Period:

No grievances were received during the current monitoring period. As a result, no mitigation measures are required. Since the project is already registered under the VCS mechanism, no further action is necessary.

Furthermore, the project team maintains regular communication with stakeholders by participating in community meetings and other relevant events in nearby village where all the panchayat meetings/social events/ festivals are organized. 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.

In summary, the project effectively engaged with stakeholders, communicated its environmental benefits, and established mechanisms for feedback and grievance resolution, contributing to a smooth and well-managed project operation.

Additionally, the VKU assessment team did not come across any negative comments or feedback from focussed group discussions with local stakeholders during their on-site assessment, as summarized in section 2.2 of MR/1/.

As a result, the assessment 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 versions 4.5/09/. The project proponent's efforts in engaging with stakeholders have been deemed suitable and in line with the prescribed requirements.

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

4.3 AFOLU-Specific Safeguards

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

4.4 Accuracy of GHG Emission Reduction and Removal Calculations

The equations and choices provided in the methodology /12/ and all other methodological tools are correctly quoted in the MR /1/. The emission reductions of the project activity are calculated using the formulae mentioned in the applied methodologies i.e., ACM0002 Version 16 /12/. The assessment 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 VCS PD Version 2.0 of dated 25-March-2015 /03/ and the applied monitoring methodology /12/.

The monitoring plan laid in the registered VCS PD /03/ is being followed at the site/38/. The assessment team has verified the information flow (from data generation, aggregation, to recording, calculation and reporting for these parameters including the values) in the MR/1/. The emission reductions are based on the net electricity generated and exported from the project. PP has provided all the sufficient data for current monitoring period. The values of the parameter net electricity generation supplied to the grid by each phase is used in deriving the GHG emission reduction. Data in MR could be very well correlated between the data sets and ER spreadsheet/2/ provided by PP. The verification of monitoring parameter has been discussed later in section 4.5 of this report.

The project monitoring plan involves only one single parameter to be monitored;

1) **$EG_{facility,y}$** (Quantity of net electricity supplied to the grid during the year y);

The monitored parameter is according to the monitoring plan and monitoring report/1/.

The parameter **$EG_{facility,y}$** (i.e., = **Net Export by Project - Net Import by Project**) value is sourced from the JMRs and Share Certificates prepared by service provider based on Joint Meter Reading (JMR)/26/. The service provider is apportioning the electricity exported to the grid and imported from the grid, based on individual WTG controller reading and summation of all WTGs connected to the common feeder. Proper calibrated meters of 0.2s accuracy class are installed at government substations to regularly monitor the Net electricity generated by WTGs (project WTGs and non-project WTGs). Electricity Export, Import and net electricity supplied by the project activity is mentioned in ER sheet/2/ prepared by PP. ER sheet has been reviewed by assessment team thoroughly by cross checking the values of Share Certificates/28/ and JMRs/26/ submitted by PP and found it correct including all the formulae and conversions and aggregations.

The bundled project activity is a part of two wind farms and each wind farm comprises of WTGs owned by other project owners as well. The electricity generated from the wind farm is fed to unified Indian grid.

Apportioning methods was used for site OJWEPL "Project- 1"

The Suzlon Energy limited is the Operation and Maintenance contractor for the project site and for wind farm. The energy readings are taken at three different points, first point is the controller meter located inside the WTGs (This data is accessible for both the PP and O&M Contactor), Second reading taken at the outgoing feeder of the pooling Substation (Combine readings is taken for all the project WTGs along with non-Project WTGs) and the final reading is taken at GSS end and this reading is used for generation the JMRs for the wind farm. O & M Contractor share only the respective data with individual clients connected to the common sub-station. They calculate the values for each client and get the values checked by the DISCOM. Thus, for OJWEPL direct values for export and import are available and have been used.

Calculation used to apportionate the net electricity supplied by Project (19 WTGs of the PP)

First the difference between the readings of PSS and GSS is derived:

Export Difference = GSS Export – PSS Total Export

Import Difference = PSS Import – GSS Total Import

Then Net Export & Net Import by the project is derived by accounting losses by the project:

Net Export by Project = PSS Project Export – [(Export Difference/PSS Total Export) x PSS Project Export]

Net Import by Project = PSS Project Import + [(Import Difference/PSS Total Import) x PSS Project Import]

Net Electricity Supplied to the Grid by the Project (OJWEPL) = Net Export by Project - Net Import by Project

Apportioning methods was used for site ORPPL “Project- 2”

The ReGen Infrastructure & Service Pvt. Ltd. is the Operation and Maintenance contractor for the project site and for wind farm. The energy readings are taken at two different points, first point is the controller meter located inside the WTGs (This data is accessible for both the PP and O&M Contractor) and the final reading is taken at GSS end and this reading is used for generation the JMRs for the wind farm. O & M Contractor share only the respective data with individual clients connected to the common sub-station. They calculate the values for each client and get the values checked by the DISCOM. Thus, for ORPPL direct values for export and import are available and have been used.

Calculation used to apportion the net electricity supplied by Project (13 WTGs of the PP)

The Net Export & Net Import by the project is derived by accounting losses by the project:

Net Export by Project = (GSS Export/ All WTGs Total Controller Export) x Project WTGs Controller Export

Net Import by Project = (GSS Import/ All WTGs Total Controller Export) x Project WTGs Controller Export

Net Electricity Supplied to the Grid by the Project (ORPPL) = Net Export by Project - Net Import by Project

It's important to highlight that the share certificates supplied by the service providers already includes apportioned data, eliminating the need for any additional apportionment. Additionally, the parameter PSS Project Export can be accessed by the project proponent (PP) through an online portal. However, it's worth noting that the parameter PSS Total Export, PSS Total Import and All WTGs Total Controller Export is not accessible to the PP due to confidentiality reasons, as it contains data from other project owners.

The monitoring plan outlined in the officially registered VCS Project Design version 02, dated 25-March-2015, is being rigorously adhered to at the project site. The assessment team has conducted a comprehensive examination of the entire information process, commencing from data generation and consolidation, through to recording, computation, allocation, and inclusion of pertinent parameters in the Monitoring Report (MR), designated as MR/1/. The reductions in emissions are calculated based on the net electricity generated by the project and subsequently supplied to the grid.

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

Table No: 14 Data and Parameters Available at Validation or Ex-ante parameters:

Parameter	Unit	Description	Value & Source
EF _{grid,OM,simple, y}	tCO ₂ /MWh	Operating margin CO ₂ emission factor of NEWNE Grid	0.9857 tCO₂/MWh is consistent with the registered VCS PD /3/ Calculated as the last 3-year (2011-12, 2012-13, 2013-14) generation-weighted average, sourced from <u>Baseline CO₂ Emission Database, Version</u>

			<u>10.0, December-2014</u> published by Central Electricity Authority (CEA), Government of India
EF _{grid,BM,y}	tCO ₂ /MWh	Build margin CO ₂ emission factor for the project electricity system in year y	0.9495 tCO₂/MWh is consistent with the registered VCS PD /3/ Baseline CO ₂ <u>Emission Database, Version 10.0, December-2014</u> published by Central Electricity Authority (CEA), Government of India
EF _{grid,CM,y}	tCO ₂ /MWh	Combined margin CO ₂ emission factor for the project electricity system in year y	0.9766 tCO₂/MWh is consistent with the registered VCS PD /3/ Calculated as the weighted average of the operating margin (0.75) & build margin (0.25) values, sourced from <u>Baseline CO₂ Emission Database, Version 10.0, December 2014</u> published by Central Electricity Authority (CEA), Government of India

According to applicable methodology ACM0002; Version 16

Under section 5 of Baseline Methodology with further description under

- Clause 35 of section 5.4-page 12 mentions about Project emissions:** As per methodology “For most renewable energy power generation project activities, considering this is a wind project activity **PE_y = 0 tCO₂**”
- Clause 60 of section 5.6-page 18 about Leakage emissions mentions that** since project activity is a renewable project activity i.e., wind power project & no other leakage emissions are considered. The emissions potentially arising due to activities such as power plant construction and upstream emissions from fossil fuel use (e.g., extraction, processing, transport etc.) are neglected. Leakage emissions: **LE_y = 0 tCO₂**

Methods and formulae set out in the project description for calculating actual emissions for current monitoring period.

$$BE_y = EG_{PJ,y} * EF_{grid,CM,y} \dots \dots \dots \text{Equation (7)}$$

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)

And

$EG_{PJ,y} = EF_{facility,y} \dots \dots \dots$ **Equation (8)**

$EG_{PJ,y}$ = 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)

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

Hence VKU Assessment Team attests to the correctness of the formulas and methodologies i.e., ACM0002: “Grid-connected electricity generation from renewable sources - version 16” /12/. 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.

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 i.e., Share Certificates/JMRs/Invoices/Monthly Generation Reports/Calibration Records of energy meters etc needed for monitoring are archived in line with the requirements of the registered monitoring plan. No significant, lack of evidence and missing data were detected during verification. Hence, the verification team confirms that the monitoring system ensures required quality of the monitoring system to ensure the quality of the monitored data. All internal data are subjected to QA/QC measures.

There is only one parameter to be monitored;

1) **EG_{facility,y}** (Quantity of net electricity supplied to the grid during the year y);

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

Table No: 12 Assessment of Parameter EG_{facility,y} (Quantity of net electricity supplied to the grid during the year y)

Parameter	EG _{facility,y} (Quantity of net electricity supplied to the grid during the year y)	
Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	The parameter is calculated parameter and recorded at least monthly by energy meter. The electricity generated by each individual wind turbine generator (WTG) at both the project sites is recorded using the controller meter, which measures the net electricity generated in kilowatt-hours (kWh). This data is used for cross-checking the import and net electricity supplied to the grid, ensuring accurate monitoring of the project's electricity generation.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered PD/3/ and monitoring methodology/12/. Also, in current monitoring period there is no deviation from the stated procedures in the registered monitoring plan. This was verified by assessment team during desk review and by Team Leader

		during onsite visit and interviews/39/ with site personnel.
	Monitoring equipment	No monitoring equipment is used as this parameter is calculated. However, the parameter “Project Export and Project Import” is calculated using measured values, are continuously monitored, hourly measured and monthly recorded. Net Electricity = Project Net Export – Project Net Import Monitoring equipment (Controller Meters) used for continuously measuring, and recording the electricity generated by each WTG - Orange Jaisalmer Wind Energy Private Limited: PSS (Pooling Sub Station): Main Meter Number (Feeder 3): RJB78194 Check Meter Number (Feeder 3): RJB78200 Main Meter Number (Feeder 4): RJB78201 Check Meter Number (Feeder 4): RJB78203 Orange Jaisalmer Wind Energy Private Limited: GSS (Government Sub Station): Main Meter Number: RJB90214 Check Meter Number: RJB90215 All Meter Type: Tri-vector, 3 Phases 4 wire Both Accuracy Class: 0.2s. Orange Renewable Power Private Limited: GSS (Government Sub Station): Main Meter Number: RJB79226 Check Meter Number: APMB3516 All Meter Type: Electronic Tri-vector, 3 Phase 4 wire Both Accuracy Class: 0.2s. The details of meters and calibration details are provided in section 4.3 of MR/1/.

	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	This is a calculated value; hence this section is not applicable, however as explained above that value for Net generation is derived by apportioning the electricity export data from energy meters installed at substation and data from individual wind turbine LCS meters, The Monitoring equipment (Energy Meter installed at site) used for continuously measuring and recording the <i>GSS Export & GSS Export</i> generated by wind farm is with accuracy class: 0.2s. and LCS meter is the integral part of the WTG panel therefore accuracy class is not applicable for LCS meter.
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	This is a calculated value; hence this section is not applicable, however as explained above that value for Net generation is derived by apportioning the electricity export data from energy meters installed at substation and individual wind turbine LCS meters, The Monitoring equipment (Energy Meter installed at GSS) used for continuously measuring and recording the <i>GSS Export & GSS Import</i> by wind farm is with accuracy class: 0.2s. and LCS meter is the integral part of the WTG panel therefore accuracy class is not applicable for LCS meter, and the accuracy is valid for the entire current monitoring period i.e., 01-May-2020 to 30-March-2023 (Inclusive of both the days)
	Calibration frequency /interval:	As per section 4.3 of VCS PD /3/, the calibration calibration/ 24/ testing of the meters at delivery point is not under the control of PP. Calibration/ Testing frequency for the set of meters (main and back-up) shall be in accordance with local/ national standards or the manufacturer's specifications. If local/national standards or the manufacturer's specifications are not available, international standards shall be used. As

		national standards available therefore PP has followed the national standards prescribed by the Central Electricity Authority (CEA) for meter calibration, which requires testing of meters once every five years as per the CEA order dated 17-March-2006 /22/.
	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, the calibration is valid throughout the reporting period. As per the registered VCS PD dated 25-March-2015/3/, The calibration frequency is once in a tariff year as per PPA/23/. However due to uneven practise of performing calibration of state electricity board Accordingly, PP has considered CEA order dated 17-March-2006/22/; which prescribes under the Clause 18 of Central Electricity Authority (Installation and Operation of Meters) 2018 /22/ This demonstrates the PP's adherence to mandatory regulatory and statutory requirements at the state and national level. Hence the calibration is valid for the whole reporting period. i.e., 01-May-2020 to 30-March-2023 (Inclusive of both the days).
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes, Calibration /24/ of the measuring equipment's is carried out by M/s Darsh Calibration Pvt. Ltd. As per <u>Directory of Accredited Calibration Laboratories by NABL</u> M/s DARSH CALIBRATION PVT. LTD. is certified for performing calibration with certificate no. CC-2070. Hence deemed satisfactory to the VVB.
	Is(are) calibration(s) valid for the whole reporting period?	Yes, the calibration is valid throughout the reporting period. The Project Proponent (PP) has followed the national standards prescribed by the Central Electricity Authority (CEA) for meter calibration, which requires testing of meters once every five years as per the CEA order dated 17-March-2014/22/. The PP has taken deviation in the previous monitoring period PP (i.e., <u>01-September-2018 to 31-October-2019</u> (Inclusive

		of both the days to account for the delay in meter calibration, in line with the VCS PD and Clause 18 of the Central Electricity Authority (Installation and Operation of Meters) 2018 /22/. This demonstrates the PP's adherence to mandatory regulatory and statutory requirements at the state and national level. Hence the calibration is valid for the whole reporting period. i.e., 01- May-2020 to 30-March-2023 (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 3.2/10/& as per PPA/23/												
	How were the values in the monitoring report verified?	Cumulative value of EG facility, y for entire monitoring period 01-May-2020 to 30-March-2023(inclusive of both dates) is reported in the monitoring report/1/, and monthly values in the ER calculation sheet/2/ in MWh. The monthly values were verified from the JMRs/26/ and cross checked from invoices/27/ thus found to be consistent. Value of this parameter for the current monitoring period was verified as 270,812.65 MWh. <table><tr><th>Year</th><th>Net Electricity Generation (MWh)</th></tr><tr><td>2020</td><td>61,767.44</td></tr><tr><td>2021</td><td>100,985.60</td></tr><tr><td>2022</td><td>90,961.35</td></tr><tr><td>2023</td><td>17,098.27</td></tr><tr><td>Total</td><td>270,812.65</td></tr></table>	Year	Net Electricity Generation (MWh)	2020	61,767.44	2021	100,985.60	2022	90,961.35	2023	17,098.27	Total	270,812.65
	Year	Net Electricity Generation (MWh)												
2020	61,767.44													
2021	100,985.60													
2022	90,961.35													
2023	17,098.27													
Total	270,812.65													
If applicable, has the reported data been cross-checked with other available data?	The monthly reported values of EG facility, y in Share Certificates/28/ were further cross checked with the monthly invoices /27/ raised by													

		the PP to DISCOM and the Share Certificates were further cross checked with JMRs /26/ issued by Rajasthan Rajya Vidyut Prasaran Nigam Limited. (RRVPNL) 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/39/ with the project stakeholder of the project activity confirms that the necessary QA/QC procedures are in place and the data management system is effective and reliable. There is a LCS reading panel at each WTG end to measure the electricity generated by WTG and three sets of 0.2s accuracy class electricity meters installed at GSS substations (one main and one check meter) to measure the energy generated from the wind farm (By project activity WTGs along with WTGs of other owners). The calibration certificates of meters will be kept in records in serialim. The LCS Panel is an integrated part of WTG and cannot be removed. In case of any fault, the WTG shall be stopped and the fault shall be rectified
	In case project proponents have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 1 to the CDM Project Standard?	No such issues.
Findings	CL#02 & CAR#02 were raised and resolved	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan. The emission reduction calculation for the project activity is estimated based on the electricity supplied by the project. Since 100% data was verified, the team can ascertain that the values taken for emission reduction calculation are free from material errors.	

During the verification assessment of project activity, accuracy of all metering equipment's has been checked and found appropriate by assessment team during onsite visit/38/. The installation and working conditions of the meters were checked during the site inspection/38/ and were found to be satisfactory as compared to the provision of calibration/testing frequency, prescribed under the VCS PD/3/.

Rajasthan Rajya Vidyut Prasaran Nigam Limited. (RRVPL)/ concerned DISCOMs is the sole authority to conduct the meter calibration local/ national standards or the manufacturer's specifications. If local/national standards or the manufacturer's specifications are not available, international standards shall be used but there are national standards (CEA guidelines) available so national standards is followed. PP has considered CEA order dated 17-March-2006; which prescribes under the para 18(b) that **"all the meters shall be tested once in five years."** Thus, validity of the calibration is considered for five years. Details of meters are provided in below table:

For OJWEPL Jaisalmer Site "Project-1"

The Project-1 has their metering arrangement at the 220kV (GSS) located at AKAL, RRVPL Sub Station. The generated energy is measured initially by the controller meters and then transfer to pooling sub station through a 33kV line. At the pooling substation the energy is stepup from 33kV to 220kV. There are two line of 220kV used for the evacuation of enegy generated by the wind farm (Project WTGs along with non-Project WTGs). There are two set meters (Contains a main and a check meters) of 3 phase 4 wire, PRIMER 300 type located at the GSS substation (AKAL). The energy readings are taken at two different points, first point is the controller meter located inside the WTGs (This data is accessible for both the PP and O&M Contactor) and the final reading is taken at GSS end and this reading is used for generation the JMRs for the wind farm.

For ORPPL Pratapgarh Site "Project-2"

The Project-2 has their metering arrangement at the 132kV (GSS) located at Dalot, RRVPL Sub Station. The generated energy is measured initially by the controller meters and then transfer to pooling sub station through a 33kV line. At the pooling substation the energy is stepup from 33kV to 132kV. There are single line of 132kV used for the evacuation of energy generated by the wind farm (Project WTGs along with non-Project WTGs). There are one set meters (Contains a main and a check meters) of 3 phase 4 wire, PRIMER 300 type located at the GSS substation (Dalot). The energy readings are taken at two different points, first point is the controller meter located inside the WTGs (This data is accessible for both the PP and O&M Contactor) and the final reading is taken at GSS end and this reading is used for generation the JMRs for the wind farm.

Table No: 15 Calibration details of Feeder meters: The calibration details of meters installed by Rajasthan Rajya Vidyut Prasaran Nigam Limited. (RRVPNL) / concerned DISCOMs for measurement of **EG_{facility,y}** is as below.

Metering Arrangement

Project	Meter and Location	Meter number	Make	Model	Accuracy class	Previous Calibration Date	Previous Calibration Validity*	Current Calibration Date*	Current Calibration Validity*
OJWEPL Jaisalmer	400KV GSS AKAL, RRVPNL (Main meter)	RJB90214	SECURE	PRIMER 300	0.2s	17-April-2017	16-April-2022	23-January- 2020	22-January-2025
	400KV GSS AKAL, RRVPNL (Backup meter)	RJB90215	SECURE	PRIMER 300	0.2s	17-April-2017	16-April-2022	23-January- 2020	22-January-2025
	FEEDER-3 At 220KV PSS Bhesada Jaisalmer (Main meter)	RJB78194	SECURE	PRIMER	0.2s	19-August- 2017	18-August- 2022	12-April- 2020	11-April- 2025

	FEEDER-3 At 220KV PSS Bhesada Jaisalmer (Backup meter)	RJB78200	SECURE	PRIMER	0.2s	19-August- 2017	18-August- 2022	12-April- 2020	11-April- 2025
	FEEDER-4 At 220KV PSS Bhesada Jaisalmer (Main meter)	RJB78201	SECURE	PRIMER	0.2s	19-August- 2017	18-August- 2022	12-April- 2020	11-April- 2025
	FEEDER-3 At 220KV PSS Bhesada Jaisalmer (Backup meter)	RJB78203	SECURE	PRIMER	0.2s	19-August- 2017	18-August- 2022	12-April- 2020	11-April- 2025
ORPPL Pratapgarh	GSS Main Meter At 132kV GSS RVPNL, Dalot	RJB79226	SECURE	PRIMER 300	0.2s	26-February- 2020	25- February- 2025	12-April- 2020	11-April- 2025
	GSS Check Meter, At 132kV GSS RVPNL, Dalot	APMB3516	SECURE	PRIMER 300	0.2s	26-February- 2020	25- February- 2025	12-April- 2020	11-April- 2025

The provision of calibration/testing frequency, prescribed under the VCS PD/3/. PP has considered CEA order dated 17-March-2006; which prescribes under the para 18(b)/22/ that "all the meters shall be tested once in five years." Thus, validity of the calibration is considered for five years. This is verified by assessment team from the calibration certificates/24/ submitted by the PP. As per VCS PD "The project adheres to all the mandatory regulatory and statutory requirements at the state as well as national level & hence acceptable to VKU assessment team.

The energy meter calibration certificates/24/ are checked and found that the calibration details provided in the MR /1/ are correct. From the verification of above table, assessment team also confirms that the energy meter calibrations are valid for the complete monitoring period i.e., from 01-May-2020 to 30-March-2023, including both the start and end dates.

The export and import energy are been measured continuously using above mentioned Main and Check meters located at the Government substation (GSS). Readings of meters are taken on monthly basis by authorized officer of SEB/ RRVNPL (State Electricity Board Rajasthan Rajya Vidyut Prasaran Nigam Limited) in the presence of PP and O&M contractor or representative of PP and O&M contractor. Based on the Meter Reading Statement to PP Share certificates was issued to PP, invoices are raised. These invoices can be used for cross checking the meter readings taken for the respective project activity. Both the meters are approved, tested & sealed by the State Utility. The meters are in the custody of State Utility and the calibration of the meters are done by the state utility/ RRVNPL and not under the control of PP. The frequency of calibration is once in 5 years⁸ by M/s Darsh Calibration Pvt. Ltd. approved laboratory.

Data Collection and Archiving:

Meter readings are collected in the presence of the plant in-charge, and export/import data are diligently recorded and stored both in logs and electronically on a daily basis. The Plant Manager regularly checks these records and conducts thorough discussions with the plant supervisor. Monitored data is stored for a period of 2 years after the end of the crediting period or until the last issuance of VCUs for the project activity, whichever comes later.

The project proponent has engaged ReGen Power Tech Private Limited for OJWEPL site (Project-1) and with Suzlon for ORPPL site (Project-2) under an "Operation and Maintenance" contract. Operation and Maintenance entity oversees daily monitoring of respective WTG generation, ensures operational safety, and manages scheduled and breakdown maintenance and continuously measures and records electricity exported to and imported from the grid. This data collection and recording are conducted at least on a monthly basis.

In accordance with **paragraph 71 of ACM0002, version 16**, all monitoring-related data is electronically archived and retained for a minimum of two years following the conclusion of the

⁸ https://cea.nic.in/wp-content/uploads/2020/04/review_regulation.pdf

last crediting period. Site personnel are primarily responsible for collecting, collating, and aggregating this data. They achieve this through the use of centrally through the Supervisory Control and Data Acquisition (SCADA) system at the Central Monitoring Station maintained at project implemented site.

The monitoring and measurement of electricity at the project metering point (i.e., Controller meters) and at the GSS (project WTGs and Non-Project WTGs) are carried out continuously, while the recording is done on a monthly basis through Joint Meter Readings & Share certificates, performed jointly by representatives of the State Utility Operations & Project Proponent/Site Personnels Representatives.

Emergency Preparedness:

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

Personnel Training:

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

QA/QC Procedures:

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

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

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

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

During onsite visit /38/ the assessment team checked all the meters and confirmed that the meters were working satisfactorily. Also, the calibration of meters is completely under purview of Rajasthan Rajya Vidyut Prasaran Nigam Limited (RRVPNL) and PP has no control over the same as confirmed through interviews of site personnel /39/ and PPA /23/.

The assessment team has verified the JMRs /26/ issued by DISCOM to PP, share certificates by O&M Contractor to PP & Invoices/27/issued to DISCOM identified in the PPA /23/ by Orange Jaisalmer Wind Energy Private Limited & Orange 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 calculation of emission reduction has been done in accordance with the applied methodology used i.e., ACM0002; Version 16/12/. As per the applied methodology, the values of project emission and leakages are considered as zero for the project activity. The emission reduction as per the applied methodology equals the baseline emissions (project emissions and leakage emissions for such project activities is considered zero). The formula provided for the calculation of baseline emissions is:

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

Where:

BE_y = Baseline emissions in year y (tCO₂e/yr)

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

$$EF_{\text{grid,CM,y}} = \text{Combined margin CO}_2 \text{ emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system" (t CO}_2\text{/MWh)}$$

Here,

$$EF_{\text{grid,CM,y}} = 0.9766$$

$$\begin{aligned} EG_{P,y} &= 61,767.44 \text{ MWh (from 01-May-2020 till 31-December-2020)} \\ &= 100,985.60 \text{ MWh (from 01-January-2021 till 31-December-2021)} \\ &= 90,961.35 \text{ MWh (from 01-January-2022 till 31-December-2022)} \\ &= 17,098.27 \text{ MWh (from 01-January-2023 till 30-March-2023)} \end{aligned}$$

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

$$EF_{\text{CO}_2} = EF_{\text{GridCM,y}}$$

$$EF_{\text{CO}_2} = \text{CO}_2 \text{ Emission Factor in year y (tCO}_2\text{e/MWh)}$$

$$EF_{\text{GridCM,y}} = \text{Combined margin CO}_2 \text{ Emission Factor of Indian Grid (tCO}_2\text{e/MWh)}$$

Where,

Calculations:

The baseline emissions for Year 2020 (from 01-May-2020 till 31-December-2020)
= 61,767.44 MWh * 0.9766 tCO ₂ /MWh
= 60,322 tCO₂e (Round down Value)
The baseline emissions for Year 2021 (from 01-January-2021 till 31-December-2021)
= 100,985.60 MWh * 0.9766 tCO ₂ /MWh
= 98,622 tCO₂e (Round down Value)
The baseline emissions for Year 2022 (from 01-January-2022 till 31-December-2022)
= 90,961.35 MWh * 0.9766 tCO ₂ /MWh
= 88,832 tCO₂e (Round down Value)
The baseline emissions for Year 2023 (from 01-January-2023 till 30-march-2022)
= 17,098.27 MWh * 0.9766 tCO ₂ /MWh
= 16,698 tCO₂e (Round down Value)
Total Baseline Emissions; (60,322+98,622+88,832+16,698) = 264,474 tCO₂e (vintage wise Round down)
Net Electricity Generation; (61,767.44+100,985.60+90,961.35+17,098.27) = 270,812.65 MWh

Emission Reduction Achievement:

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)
01-May-2020 to 31-December-2020	60,322	0	0	60,322
01-January-2021 to 31-December-2021	98,622	0	0	98,622
01-January-2022 to 31-December-2022	88,832	0	0	88,832
01-January-2023 to 30-March-2023	16,698	0	0	16,698
Total	264,474	0	0	264,474

It's important to highlight that the estimated emission reduction expected from the project activity during the current monitoring period was projected to be 299,873 metric tons of carbon dioxide equivalent (tCO₂e). However, the actual emission reductions are 264,474 tCO₂e. This represents a decrease of -11.80% over the anticipated value.

Wind Availability Impact:

The principal reason for this lower emission reduction is attributed to the low wind availability and low PLF during the monitoring period. It's worth noting that electricity generation from wind projects is influenced by various climatic conditions, and these factors are beyond the control of the project participant.

Plant Load Factor (PLF):

One crucial metric for evaluating the project's performance is the Plant Load Factor (PLF). Since this is a bundled project so the PLF analysis is done for Project 1 and Project 02, which is as below: Project: 01 (39.9 MW Wind power project in Jaisalmer (OJWEPL) Jaisalmer)				
Estimated PLF as per registered PD		20.0%		
Current monitoring period		Actual Generation (MWh)		
01-May-20	30-Mar-23	1,62,437		
Total generation		1,62,437		
Total no. of days		1,064		

Capacity	39.9
Actual PLF	15.94%
Percentage variation in PLF wrt registered PD	-20.29%
Breaching value of PLF as per PD	29.90%
As per IRR sheet	
IRR as per registered PDD	9.67%
Benchmark is	14.10%

Project: 02 (19.5 MW Wind power project in Pratapgarh (ORPPL) Pratapgarh)		
Estimated PLF as per registered PD		22.0%
Current monitoring period		Actual Generation (MWh)
01-May-20	30-Mar-23	1,08,375
Total generation		1,08,375
Total no. of days		1,064
Capacity		19.5
Actual PLF		21.76%
Percentage variation in PLF w.r.t registered PD		-1.07%
Breaching value of PLF as per PD		31.60%
As per IRR sheet		
IRR as per registered PDD		9.58%
Benchmark is		14.50%

Bundled Wind Power Project in Rajasthan by Orange Renewable Power Private Limited		
For 59.4 MW		
Yearly Estimated Generation as per registered PD		1,05,335.00
Estimated PLF as per registered PD		20.24%
Estimated Generation for current monitoring period		3,07,058.74
Current monitoring period		Actual Generation (MWh)
01-May-20	30-Mar-23	2,70,812.65
Total generation		2,70,812.65
Total no. of days		1,064
Capacity		59.4
Actual PLF		17.85%
Percentage variation in PLF wrt registered PD		-11.80%
Breaching value of PLF as per PD		31.60%
As per IRR sheet		
IRR as per registered PDD		9.58%
Benchmark is		14.50%

From above tables, it is clear that the PLF in current monitoring period has been lower. This is reflected in lower emission reductions for the current monitoring period at -11.80% due to the lower in power output resulting from lower wind availability. Wind availability is a natural phenomenon and PP has no control over it and during the current monitoring period low wind availability is observed that result to lower generation during the current monitoring period.

The -11.80% actual lower emission reduction achieved during the current monitoring period neither affects additionality nor there is any deviation from the registered monitoring plan, which was verified during onsite visit & verified and traced through evidences and calculative computation during desk review & hence acceptable to VKU.

All the data have been made available to the assessment team by PP during site visit/38/ and as supporting evidences which have been monitored as per required monitoring frequency. The means of verification for the values of parameters, used for baseline emission calculation, is described above.

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

VKU is of the opinion that this method of calculation of emission reductions is accurate and results in conservative estimation of emission reduction and is in line with the applicable VCS requirements set out in section 3.15 of VCS Standard version 4.5 and that the verification of the GHG statement was conducted in accordance with ISO 14064-3; 2019. /43/

4.6 Non-Permanence Risk Analysis

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

5 VERIFICATION OPINION

VKU Certification Pvt. Ltd. has performed the seventh verification of the first crediting period (31-March-2013 to 30-March-2023 which is inclusive of both dates) for the project activity “Bundled Wind Power Project In Rajasthan by Orange Renewable Power Private Limited” in India, VCS Registry Project ID 1465, for the monitoring period 01-May-2020 to 30-March-2023 (Inclusive of both start and end dates), with regard to the relevant requirements for VCS activities. The project proponents of the “Bundled Wind Power Project In Rajasthan by Orange Renewable Power Private Limited” amounts to 264,474 tCO₂e of carbon dioxide equivalent (tCO₂e). These reported reductions have been assessed in accordance with the relevant requirements outlined in the VCS Standard, version 4.5/09/.

The project proponents of the “Bundled Wind Power Project In Rajasthan by Orange Renewable Power Private Limited” project is responsible for:

- Preparation of greenhouses gas emissions data and the reported greenhouse gas emission reductions from the project on the basis set out in the monitoring plan contained in the registered VCS PD version 2 of 25-March-2015 /3/
- Maintenance of records and reporting procedures in accordance with that plan, including the calculation and determination of greenhouse gas emission reductions of the project.

It is the responsibility of VKU to express an independent verification opinion about the project’s conformity with the requirements of VCS Standard version 4.5/9/ and GHG program applied, on the reported greenhouse gas emission reductions from the project.

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

- The project has been implemented and operated as per the registered VCS PD version 2 of 25-March-2015 /3/
- Monitoring report and other supporting documents provided are complete and verifiable and in accordance with the applicable VCS Standard version 4.5/9/ requirements;
- Monitoring is in place as per the applied baseline and monitoring methodology;
- Monitoring plan in the registered VCS PD version 2 of 25-March-2015 /3/ is as per the applied baseline and monitoring methodology.

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

As per VCS Standard Version 4.5, clause 4.1.23, 4.1.24 and 4.1.25, VKU is of opinion that that GHG emission reduction stated in the monitoring report version 03 of 25-October-2023 for the “Bundled Wind Power Project in Rajasthan by Orange Renewable Power Private Limited” in India

for the period 01-May-2020 to 30-March-2023 (Inclusive of both start and end dates) **are fairly and correctly stated**.

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

Opinion	Final Documents	Monitoring Period	Emission Reductions achieved	Remarks
Positive opinion ☒ Negative Opinion ☐ Adverse Opinion ☐ Unmodified Opinion ☒ Modified Opinion ☐	Monitoring Report Version 03 dated 25-October-2023 Emission Reduction Sheet Version 02 dated 11-October-2023	01- May-2020 to 30-March-2023 (Inclusive of both the days)	264,474 tCO₂e	The GHG emission reductions are calculated on the basis of approved methodology ACM0002: Grid-connected electricity generation from renewable sources --- Version 16/12/ and the monitoring plan included in the registered VCS PD /3/
Hence VKU is able to certify that the emission reduction from the project during the current monitoring period 01-May-2020 to 30-March-2023 (Inclusive of both start and end dates) amounts to 264,474 tCO₂e assessed in line with the applicable VCS requirements set out in section 3.15 of VCS Standard version 4.5/9/ The VVB hereby issues a resolutely positive and unmodified opinion meticulously drafted in strict accordance with ISO 14064-3:2019, Section 09, and the precise provisions of Clause 9.7.1.6 & 9.7.2 of ISO 14065:2020. This opinion stands in full alignment with the exacting requirements delineated in ISO/IEC 17029:2019, Section 9.7. 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 <u>Table 04</u> 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)
Vintage 2020 01-May-2020 to 31-December-2020	60,322	0	0	60,322
Vintage 2021 01-January-2021 to 31- December -2021	98,622	0	0	98,622
Vintage 2022 01-January-2022 to 31-December-2022	88,832	0	0	88,832
Vintage 2023 01-January-2023 to 30-March -2023	16,698	0	0	16,698
Total	264,474	0	0	264,474

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

Year	Ex-ante emissions reductions/removals	Achieved emissions reductions/removals	Percent difference	Justification for the difference
Verification period: 01-May-2020 to 30-March-2023 (Inclusive of both start and end dates)	299,873	264,474	-11.80%	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 wind unavailability & scheduled & unscheduled 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
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM M&P	Modalities and Procedures CDM
CEA	Central Electricity Authority
CER(s)	Certified Emission Reduction(s)
CH ₄	Methane
CL	Clarification Request
CM	Combined Margin
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
DISCOM	Distribution Company
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	Executive Board
EF	Emission Factor
ER	Emission Reductions
PPA	Energy Purchase Agreement
FAR	Forward Action Request
GHG(s)	Greenhouse gas(es)
GSS	Grid Sub Station
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
LE	Leakage Emissions
MoV	Means of Verification
MR	Monitoring Report

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

APPENDIX B: AUDIT FINDINGS

CL: Clarification Request_03

CAR: Corrective Action Request_02

FAR: Forward Action Request_00

Description of Clarification Requests (CLs) raised by VVB:

Type	Date	06-July-2023
CL#01	Reference	Section 01/DR/OSV/AT
Description of the Non-Conformance		
1) In Section 1.1 of MR: PP is requested to clarify i.e.; the project capacity is in AC or DC. 2) In Section 1.1 of MR: During site-visit by assessment team, the name of the plant/project and project proponent is found to be different from the name already registered in the documents i.e., Greenko Renewable Power Private Limited & Greenko Jaisalmer Wind Energy Private Limited PP to clarify the inconsistency. 3) In Section 1.1 of MR: PP is requested to provide commissioning certificate to assessment team to verify the date of commissioning of all the WTGs. 4) In Section 1.1 of MR: PP is requested to provide a copy of PPA signed in between PP and Grid. 5) In Section 1.2 of MR: As mentioned in section 1.1 of PD version 02 dated 25-March-2015 this is a bundled project activity so PP is requested to justify the written statement. 6) In Section 1.7 of MR: PP is requested to provide a KML file of the project location. 7) In Section 1.7 of MR: PP is requested to provide a valid document for verification of the feeder location and number to WTGs connected to particular feeder. 8) In Section 1.9 of MR: Assessment team was not able to trace any declaration certificate. PP is requested to submitted it. 9) In Section 1.11 of MR: PP is requested to provide a sample copy of Employment record 10) In Section 1.11 of MR: Table 1: Sustainable Development Contributions - For SDG 7.2: a. What is this SDG (7.2) indicating to increase? b. PP to specify the time frame, Either applicable to current monitoring period or not. c. PP is requested to provide relevant reference/weblinks - For SDG 13.0: d. What is this SDG (13.0) indicating to increase? e. PP to specify the time frame, Either applicable to current monitoring period or not. f. PP is requested to provide relevant reference/weblinks.		
1 st Response from PP	Date	09-October-2023
1. In Section 1.1 of MR: The project capacity is in AC and same is mentioned in section. 2. In Section 1.1 of MR: The name of the project and PP has been revised from the registered PD, Version 3.0. 3. In Section 1.1 of MR: commissioning certificate is submitted with the responses. 4. In Section 1.1 of MR: PPA is submitted with the responses.		

5. **In Section 1.2 of MR:** The project activity is bundled projects not a grouped project i.e., two different SPVs are involved in the project activity accordingly the section is revised.
6. **In Section 1.7 of MR:** KML file is not required as per MR template version 4.2.
As MR template version 4.2. For AFOLU projects, GCS projects, grouped projects, or projects with multiple project activity instances, a separate KML file is required and this is neither grouped project nor AFOLU projects, GCS projects and geodetic coordinates of all WTGs are mentioned in MR.
7. **In Section 1.7 of MR:** Feeder location is not requirement of section 1.7 of MR template version 4.2.,Please refer section 3.1 for feeder details.
8. **In Section 1.9 of MR:** Declaration certificate is submitted with the responses.
9. **In Section 1.11 of MR:** Employment data records are submitted with the responses.
10. **In Section 1.11 of MR: Table 1: Sustainable Development Contributions:**

For SDG 7.2:

- a. Net Impact on SDG Indicator column is updated as per MR template version 4.2.
- b. Current Project Contributions column is updated as per MR template version 4.2 with time frame.
- c. Reference link is added in footnote.

For SDG 13.0:

- d. Net Impact on SDG Indicator column is updated as per MR template version 4.2.
- e. Current Project Contributions column is updated as per MR template version 4.2 with time frame.
- f. Reference link is added in footnote.

1 st Assessment by Audit Team	Status	Open/Closed	Date	13-October-2023
1. In Section 1.1 of MR: PP has specified that the project capacity is in AC and the same is incorporated in the MR the same has been reviewed and found correct by the assessment team. (Closed) 2. In Section 1.1 of MR: The assessment team found that the name of the project and PP has been revised from the registered PD, Version 3.0 the same has been checked and confirmed (Closed) 3. In Section 1.1 of MR: The assessment team confirms that PP has submitted the commissioning certificate the same has been reviewed and found correct and hence accepted. (Closed) 4. In Section 1.1 of MR: The assessment team confirms that PP has submitted the PPA with close audit findings same has been checked and confirmed. (Closed) 5. In Section 1.2 of MR: PP has provided appropriate justification which the assessment found correct and hence accepted. (Closed) 6. In Section 1.7 of MR: PP has provided appropriate justification which assessment found correct and hence accepted. (Closed) 7. In Section 1.7 of MR: PP has provided appropriate justification which the assessment found correct and hence accepted (Closed) 8. In Section 1.9 of MR: The assessment team confirms that a Declaration certificate is submitted same has been checked and found correct hence confirmed. (Closed) 9. In Section 1.11 of MR: Employment data records are submitted with the responses the same has been checked and found correct (Closed) 10. In Section 1.11 of MR: Table 1: Sustainable Development Contributions: For SDG 7.2:				

- a. The assessment team confirms PP has updated the Net Impact on the SDG Indicator column as per requirement MR template version 4.2 same has been checked and confirmed **(Closed)**
- b. The assessment team confirms PP has clarified/ updated the Current Project Contributions column as per the required MR template version 4.2 with time frame same has been checked and confirmed **(Closed)**
- c. PP has incorporated the Reference link in the footnote same has been checked and found working. **(Closed)**
For SDG 13.0:
- d. The assessment team confirms PP has updated the Net Impact on the SDG Indicator column as per the requirement template MR template version 4.2. The same has been checked and confirmed **(Closed)**
- e. The assessment team confirms PP has clarified/ updated the Current Project Contributions column as per the required MR template version 4.2 with time frame same has been checked and confirmed **(Closed)**
- f. PP has incorporated the Reference link in the footnote same has been checked and found working **(Closed)**

Hence CL#01 is Closed by the assessment team.

Type	Date	06-July-2023
CL#02	Reference	Section 2/DR/OSV/AT Section 3/DR/OSV/AT Section 4/DR/OSV/AT Section 5/DR/OSV/AT Section ER Sheet/DR/OSV/AT
Description of the Non-Conformance		
1) In Section 2.2 of MR: a) Is there any positive comments received? b) PP is requested to provide a copy of communication book or register to verify that there is no negative comment received from stakeholders as mentioned above c) PP is requested to provide a copy of process book. d) PP is requested to provide details and evidence about the stakeholder meeting 2) In Section 3.1 of MR: a) PP is requested to clarify is it a future process or is currently implemented. b) PP is requested to provide Breakdown detail for this monitoring period. c) PP is requested to provide the evidence in the support of written statement in section 3.1 of MR. 3) In Section 3.2.2 of MR: PP is requested to clarify whether the Deviations observed or approved and is there any deviation is requested in current monitoring period 4) In Section 4.1 of MR: PP is requested to provide the reference/weblink for the mentioned referenced documents. 5) In Section 4.2 of MR: a) PP is requested to provide share certificate. b) PP is requested to provide a sample copy of the calculation perform for the net electricity.		

c) PP is requested to justify this value as found inconsistent with the ER sheer submitted by the PP. Unit? d) PP is requested to provide the calibration certificates of the meters. 6) In Section 4.3 of MR: a) PP is requested to provide a copy of the agreement. b) PP is requested to provide monthly reports prepared by O&M contractor. 7) In Section 5.4 of MR: PP is requested to justify this date 8) In Section 5.4 of MR: PP is requested to justify this value as it is found inconsistent with ER sheet submitted by PP 11) In ER Sheet: a) PP is requested to provide the copy of JMRS for the current period of verification b) PP is requested to provide the copy of invoices for the current period of verification				
1 st Response from PP		Date	09-October-2023	
1. In Section 2.2 of MR a. No comments received (Positive/ Negative). b. Copy of Grievance register is submitted with the responses. c. process book is Grievance register please refer it. d. Stakeholder meeting documents are submitted with the responses. 2. In Section 3.1 of MR a. The process is currently implemented accordingly the section is revised. b. Breakdown details are submitted with the responses and also added in Appendix 2 of MR. c. Supporting documents are submitted with the responses. 3. In Section 3.2.2 of MR: The Section 3.2.2 has been updated as per MR template, Version 4.2. 4. In Section 4.1 of MR: The reference link is added in footnote. 5. In Section 4.2 of MR: a. Quantity of net electricity supplied to the grid sourced from JMR there is no share certificate accordingly the sentence is revised. b. Export and Import values are directly sourced from JMR. Net Electricity = Export – Import Please Refer ER sheet for calculation. c. The value is updated as per ER sheet. d. Calibration certificates are provided with the responses. 6. In Section 4.3 of MR: a. Agreement copy is provided with the responses. b. Monthly report prepared by O&M contractor is provided with the responses. 7. In Section 5.4 of MR: The date is revised. 8. In Section 5.4 of MR: The values are updated as per ER sheet. 9. In ER Sheet: a. JMRS are submitted with the responses. b. Invoices are submitted with the responses.				
1 st Assessment by Audit Team	Status	Open/Closed	Date	13-October-2023
1. In Section 2.2 of MR				

- a. PP has provided appropriate justification which the assessment found correct and hence accepted. **(Closed)**
- c. The Assessment team confirms that PP has submitted a Copy of the Grievance register with the responses same has been checked and found correct. **(Closed)**
- d. The Assessment team confirms that PP has submitted a Copy of the Grievance register with the responses same has been checked and found correct. **(Closed)**
- e. The Assessment team confirms that PP has submitted Stakeholder meeting documents/evidence with the responses same have been reviewed found correct. **(Closed)**
- 2. In Section 3.1 of MR**
 - a. PP has justified the process is currently implemented accordingly the section the same has been incorporated in MR has been reviewed and found correct. **(Closed)**
 - b. The assessment team confirms that PP has submitted Breakdown details also incorporated in Appendix 2 of MR same has been checked and found consistent. **(Closed)**
 - c. The assessment team confirms that the Supporting documents have been submitted and have been reviewed and found correct. **(Closed)**
- 3. In Section 3.2.2 of MR:** The assessment team confirms that Section 3.2.2 has been updated as per MR template Version 4.2 requirement. **(Closed)**
- 4. In Section 4.1 of MR:** The assessment team confirms the reference link is added in the footnote same has been checked and found working. **(closed)**
- 5. In Section 4.2 of MR:**
 - a. PP has provided the required justification that PP has calculated the Quantity of net electricity supplied to the grid sourced from JMR there is no share certificate accordingly the sentence is revised and the statement is found justified and hence accepted by the assessment team **(closed)**
 - b. PP has provided the required justification that PP has calculated that Export and Import values are directly sourced from JMR
Net Electricity = Export – Import The statement is found justified hence accepted by the assessment team. **(Closed)**
 - c. The assessment team found that the value is updated as per the ER sheet. Hence accepted **(Closed)**
 - d. The assessment team confirms that the Calibration certificates are provided with the responses same has been checked and verified. **(closed)**
- 6. In Section 4.3 of MR:**
 - a. The assessment team confirms that an agreement copy is submitted with the responses same has been checked and found correct hence accepted by the assessment team. **(Closed)**
 - b. Monthly report prepared by O&M contractor is provided with the responses. **(Closed)**
- 7. In Section 5.4 of MR:** PP has revised the date in the MR same has been checked and confirmed by the assessment team. **(Closed)**
- 8. In Section 5.4 of MR:** The values are updated as per ER sheet value same has been checked and found consistent and hence accepted by the assessment team. **(Closed)**
- 9. In ER Sheet:**
 - f. The assessment team confirms that PP has submitted JMRs with the responses same has been checked and confirmed. **(Closed)**
 - g. The assessment team confirms that PP has submitted the Invoices with the responses same has been checked and verified by the assessment team. **(Closed)**

Hence CL#02 is Closed by the assessment team.

Type	Date	19-October-2023
CL#03	Reference	Section 1/DR/TR Section 2/DR/TR Section 3/DR/TR Section 5/DR/TR
Description of the Non-Conformance		
1) In Section 1.1 of MR: Description of the substation is not matching with commissioning certificate 2) In Section 2.1 of MR: Why this project failed to create socio-economic impacts and why this not applicable. 3) In Section 2.2 of MR: When did this happen. No Date of initial stakeholder consultation has been mentioned 4) In Section 2.2 of MR: It is not clear How due account of all and any input received during ongoing communication has been taken. 5) In Section 3.1 of MR: This is not a Product standard. Please mention the correct Product standard to which its specification conforms 6) In Section 3.1 of MR: Details of Transformer, voltage generated at the hub, monitoring meter's location and distance from the nearest WTG of the bundle need to be provided 7) In Section 3.2.2 of MR: Information is inconsistent with commissioning certificates. Detailed and clear description of metering to be provided. 8) In Section 5.1 of MR: Complete year wise Monitoring period need to be mentioned. For each year 9) In Section 5.4 of MR: This section is not clearly described. What PLF was estimated in registered PD. Are different PLF were estimated for both sites.		
1 st Response from PP	Date	25-October-2023
1) In section 1.1 of MR: The substation name has been revised as per the commissioning certificate and the supporting for the same has been provided. 2) In section 2.1 of MR: There are no negative environmental and/or social- economic impacts due to the project and it has been revised. 3) In section 2.2 of MR: The dates of the local stakeholders have been mentioned. 4) In section 2.2 of MR: There were no comments received during the ongoing communication therefore no mitigation action is required. 5) In Section 3.1 of MR: All the details have been provided in the given section of the revised monitoring report version 3.0. 6) In Section 3.1 of MR: All the details have been added in the given section. 7) In Section 3.2.2 of MR: The meter details provided is in lined with the commissioning certificate and the same information has been incorporated in the monitoring report version 3.0 and the supporting document for the same has been provided. 8) In Section 5.1 of MR: Complete year wise monitoring period for each year has been mentioned in the revised monitoring report version 3.0 9) In Section 5.4 of MR: Different PLF i.e., 20 and 22 were estimated for both the projects (OJWEPL) and (ORPPL) respectively and the given section has been revised accordingly.		
1 st Assessment by Audit Team	Status	Closed
	Date	26-October-2023
PP has made all the revisions in the MR raised as TR findings in the MR and FVR and above raised findings have been successfully closed. Hence CL#03 is Closed by the assessment team.		

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

Type	Date	06-July-2023
CAR#01	Reference	Section 1/DR/OSV/AT
Description of the Non-Conformance		
1) In Cover page of MR: a) PP to keep the report format consistent with the VCS MR Template guidelines Version 4.2. Also check that the page number is mentioned throughout the report. b) Please revise the version & date of issue during next submission of MR to assessment team c) PP is requested to fill a valid report ID. d) PP is requested to update the monitoring period as assessment team found it inconsistent with the crediting period e) Inclusive of both the dates? f) PP is requested to update the content table. 2) In Content MR: PP is requested to update the content table. 3) In Section 1.1 of MR: a) PP to specify how the electricity generated at site is distributed among the captive users as per EWA and also explain its supply to unified Indian grid. b) PP to also specify the name of the substation from where the electricity is finally transported to grid lines & at what voltage. c) PP is requested to provide an estimated GHG emission reduction annually and also throughout the crediting period. d) PP is requested to indicate about methodology used. e) PP is requested to incorporate the information about PPA signed in between PP and Grid in section 1.1 of MR. f) PP is requested to express the ERs estimated for current monitoring period and actual percentage of achieved ERs g) PP is requested to recalculate the number of years for 1st Verification and 2nd verification. h) PP is requested to indicate about the current verification. 4) In Section 1.2 of MR: PP to indicate if the AFOLU project category and activity type is applicable to this project activity. 5) In Section 1.3 of MR: PP is requested to update the organization name as assessment team found it inconsistent with the registered PD dated 25-March-2015 and also found inconsistent on the site visit. 6) In Section 1.4 of MR: PP is requested to update the table as per the MR template version 4.2. 7) In Section 1.6 of MR: PP is requested to update the crediting period as the assessment team has found it consistent with PD version 02. 8) In Section 1.7 of MR: a) PP is requested to provide the PSS feeder location along with supporting documents and update feeder number as assessment team found this information inconsistent during the site visit. b) As the village name is inconsistent with PD, PP is requested to update it. c) During the desk review assessment team found the WTGs number inconsistent with the registered Pd and during the site visit verification team found WTGs no is inconsistent with the MR. PP is requested to update it appropriately. d) PP is requested to update the Feeder number as per the current practice followed at the site and also provide the supporting documents for the same.		

- 9) **In Section 1.9 of MR:** PP is requested to indicate about benefits will be claimed from which GHG programme for current monitoring period.
- 10) **In Section 1.11 of MR:**
- PP to provide a brief description that includes the requirements for this particular section (as described in VCS template version 4.2) in no more than 100 words.
 - PP is requested to complete the sentence.
 - PP is requested to update the SDG table as per MR template version 4.2

1stResponse from PP

Date

09-October-2023

- In Cover page of MR:**
 - The font and format are revise as per VCS MR Template guidelines Version 4.2.
 - Version & date of issue is revised.
 - Report ID is revised.
 - The monitoring period corrected and now in line with the crediting period.
 - Yes, monitoring period is inclusive of both start and end dates.
 - Content table is updated.
- In Content MR:** Content table is updated.
- In Section 1.1 of MR:**
 - The electricity is not supplied to any captive user, the electricity is supplied to grid and the information is incorporated in section.
 - Name of the substation is added with voltage.
 - The estimated GHG emission reduction per year as well as throughout the crediting period is now provided.
 - Methodology information is not required in the section 1.1 as per Template Monitoring Report: VCS Version 4.2.
 - Information about PPA is added and PPA is submitted with the responses.
 - The estimated ER for current monitoring period is incorporated and actual percentage is not required as per MR template version 4.2 please refer section 5.4 for it.
 - Number of years are recalculated and updated.
 - Current Monitoring period is mentioned in the table.
- In Section 1.2 of MR:** The section is revised as per VCS MR Template guidelines Version 4.2.
- In Section 1.3 of MR:** The organization name is revised and corrected as per registered PD, Version 3.0 as well as last MR, Version 4.0.
- In Section 1.4 of MR:** The table is corrected as per MR template, Version 4.2.
- In Section 1.6 of MR:** The crediting period corrected as per registered VCS PD.
- In Section 1.7 of MR:**
 - Feeder location is not requirement of section 1.7 of MR template version 4.2. Please refer section 3.1 for feeder details.
 - The village name is revised and consistent with registered PD.
 - The WTG number and the information is revised.
 - Feeder location is not requirement of section 1.7 of MR template version 4.2. Please refer section 3.1 for feeder details.
- In Section 1.9 of MR:** The project activity not claimed any other GHG program for the current monitoring period. Please refer link provided at the footnote of the revised MR.
- In Section 1.11 of MR:**
 - The section is revised as per VCS MR template version 4.2.
 - The sentence is removed because of words limit as per VCS MR template version 4.2.
 - Table 1: Sustainable Development Contributions is revised as per VCS MR template version 4.2.

1 st Assessment by Audit Team	Status	Open/Closed	Date	13-October-2023
1. In the Cover page of MR: a. PP has updated the font and format as per VCS MR Template Guidelines Version 4.2 same has been checked and found consistent. (Closed) b. PP has revised the version & date of issue same has been checked in the MR and found consistent. (Closed) c. PP has revised report ID same has been checked and found consistent (Closed) d. The monitoring period was corrected by the PP and is now in line with the crediting period hence found accepted. (Closed) e. PP has justified that Yes; the monitoring period is inclusive of both start and end dates. (Closed) f. Assessment team confirms by reviewing the MR that Content table is updated hence accepted. (Closed) 2. In Content MR: Assessment team confirms by reviewing the MR that Content table is updated (Closed) 3. In Section 1.1 of MR: a. PP has clarified that the electricity is not supplied to any captive user, the electricity is supplied to the grid and the same information has been incorporated in the section and hence accepted. (Closed) b. The name of the substation is incorporated with voltage confirmed by the assessment team by reviewing the MR. (Closed) c. Assessment team confirmed that the estimated GHG emission reduction per year as well as throughout the crediting period is now provided same has been checked and found correct. (Closed) d. Assessment team confirmed that PP has provided an appropriate justification which is found to be correct and hence accepted. (Closed) e. Assessment team confirmed that Information about PPA is incorporated and also PPA is submitted with the responses. (Closed) f. The assessment team confirmed that the estimated ER for the current monitoring period is incorporated and PP has provided an appropriate justification. (Closed) g. The assessment team confirmed that the number of years is recalculated and updated same has been checked and confirmed. (Closed) h. The assessment team confirmed Current Monitoring period mentioned in the table has been checked and confirmed. (Closed) 4. In Section 1.2 of MR: The assessment team confirmed that the section is revised as per VCS MR Template Guidelines Version 4.2. The same has been checked and confirmed. (Closed) 5. In Section 1.3 of MR: PP has revised the organization and corrected as per registered PD, Version 3.0 as well as last MR, Version 4.0. has been checked and found correct. (Closed) 6. In Section 1.4 of MR: The assessment team confirmed the table is corrected as per MR template, Version 4.2. requirement (Close) 7. In Section 1.6 of MR: The assessment team confirmed that the crediting period corrected as per registered VCS PD same has been checked and confirmed. (Closed) 8. In Section 1.7 of MR: a. PP has provided appropriate justification which the assessment found correct and hence accepted. (Closed). b. PP has revised the village name and same has been checked and found consistent with registered PD hence accepted by the assessment team. (Closed) c. PP has revised the WTG number and the information regarding WTGs same has been checked and found correct by the assessment team (Closed)				

d. PP has provided appropriate justification which the assessment found correct and hence accepted. (Closed)
9. In Section 1.9 of MR: A clarification has been provided that the project activity not claimed any other GHG program for the current monitoring period. Also, PP has provided link at the footnote of the revised MR the same has been checked and confirmed. (Closed)
10. In Section 1.11 of MR:
a. PP has revised the section as per VCS MR template version 4.2 and same has found consistent, hence accepted. (Closed)
b. PP has provided appropriate justification which the assessment found correct and hence accepted. (Closed) .
c. PP has revised the Table 1: Sustainable Development Contributions as per VCS MR template version 4.2 same has been checked and found consistent. (Closed) .
Hence CAR#01 is Closed by the assessment team.

Type	Date	06-July-2023
CAR#02	Reference	Section 2/DR/OSV/AT Section 3/DR/OSV/AT Section 4/DR/OSV/AT Section 5/DR/OSV/AT
Description of the Non-Conformance		
1) In Section 2.1 of MR: PP is requested to elaborate the section 2.1 of MR as per the guidelines to fill MR template version 4.2 2) In Section 2.2 of MR: PP is requested to provide a summary of details about the ongoing Communication process. 3) In Section 2.3 of MR: PP is requested to update this section as per the guidelines to fill the MR template version 4.2 4) In Section 3.1 of MR: a) PP is requested to elaborate the implementation status of the project and also incorporate technical specification of WTGs and provide the evidences for the same. b) PP is requested to indicate about O&M contractor entity and provide the evidence for the same. c) PP is requested to elaborate and mention about the actual value of electricity generated and actual amount of electricity generated. 5) In Section 3.2.1 of MR: PP is requested to update this section as per the guidelines to fill the MR template version 4.2. 6) In Section 4.1 of MR: PP is requested to update the formatting of table content as per the guidelines to fill MR template version 4.2 and make it consistent throughout the MR. 7) In Section 4.3 of MR: a) PP has not described the methods used for generating/measuring, recording, storing, aggregating, collating and reporting the data on monitored parameter. b) PP is requested to elaborate the Data collection and Data Archiving procedures c) PP is requested to incorporate Emergency procedures d) PP is requested to incorporate QA/QC processes e) PP is requested to incorporate training processes f) PP is requested to elaborate OJWEPL & ORPPL g) PP is requested to indicate the location and name of the substation.		

h) PP to specify and elaborate in MR the energy generation to conversion and then distribution to Grid. i) PP is requested to incorporate the Role and responsibility of the monitoring staff and training and timely review of performance of personnel and also labelled the chart 8) In Section 5.2 of MR: PP is requested to elaborate and ambiguously use references with respect to the methodology used throughout the MR and for this particular section, please quote the required sections that talks about the Project emissions for renewable projects 9) In Section 5.3 of MR: a) PP is requested to elaborate and ambiguously use references with respect to the methodology used throughout the MR and for this particular section, please quote the required sections that talks about the Project Leakage for renewable projects. b) PP is requested to update the calculations as per the requirements of VCS MR template version 4.2. 10) In Section 5.4 of MR: a) PP is requested to elaborate this section as per the requirements and guidelines to fill the MR template version 4.2. b) PP is requested to indicate about the methodology used. 11) In APPENDIX 1 of MR: a. PP is requested to mention the make, model and accuracy class of the meters.		
1stResponse from PP	Date	09-October-2023
1. In Section 2.1 of MR: Now the Section 2.1 (No Net Harm) is revised as per the guidelines to fill MR template Version 4.2. 2. In Section 2.2 of MR: The summary of details about the ongoing Communication process is added and copy of Grievance register is submitted with the responses. 3. In Section 2.3 of MR: The Section 2.3 has been revised as per the guidelines to fill the MR template, Version 4.2. 4. In Section 3.1 of MR: a. Technical specification of WTGs is incorporated and supporting documents are provided with the responses. b. The information of O&M contractor is incorporated and O&M agreement is submitted with the responses. c. The Section 3.1 has been revised as per the guidelines to fill the MR template, Version 4.2. 5. In Section 3.2.1 of MR: The Section 3.2.1 has been updated as per MR template, Version 4.2. 6. In Section 4.1 of MR: The table formats are updated as per the guidelines to fill MR template version 4.2. 7. In Section 4.3 of MR: a. The methods used for generating/measuring, recording, storing, aggregating, collating and reporting the data on monitored parameter is incorporated. b. Data collection and Data Archiving procedures is incorporated. c. Emergency procedures is incorporated. d. QA/QC processes is incorporated. e. Training processes is incorporated. f. OJWEPL & ORPPL are elaborated. g. location and name of the substation is incorporated. h. MR the energy generation to conversion and then distribution to Grid is incorporated.		

i. Role and responsibility of the monitoring staff is incorporated and training and timely review of performance of personnel also incorporated. 8. In Section 5.2 of MR: The section is revised with reference of applied methodology. 9. In Section 5.3 of MR: a. The section is revised with reference of methodology. b. Section 5.3 have no calculations so it is not applicable. 10. In Section 5.4 of MR: a. The section is revised as per the guidelines to fill the MR template, Version 4.2. b. Methodology reference is added. 11. In APPENDIX 1 of MR: Make model and accuracy class is added.				
1stAssessment by Audit Team	Status	Open/Closed	Date	13-October-2023
1. In Section 2.1 of MR: PP has revised the Section 2.1 (No Net Harm) as per the guidelines to fill MR template Version 4.2. same has been checked in the revised MR and found consistent. (Closed) 2. In Section 2.2 of MR: PP has revised the summary of details about the ongoing Communication process is incorporated same has been checked in the revised MR and found consistent also copy of Grievance register is submitted with the responses same has checked and found correct. (Closed) 3. In Section 2.3 of MR: PP has revised the Section 2.3 as per the guidelines to fill the MR template, Version 4.2. requirement same has been checked in the revised MR and found consistent (Closed) 4. In Section 3.1 of MR: d. PP has incorporated the technical specification of WTGs and supporting documents are provided with the responses the same has been checked and found to be correct (Closed). e. The information of O&M contractor is incorporated and O&M agreement is submitted with the responses and the same has been checked and verified by the assessment team. (Closed) f. PP has revised The Section 3.1 as per the guidelines to fill the MR template, Version 4.2. requirement same has been checked in the revised MR and found consistent (Closed) 5. In Section 3.2.1 of MR: The Section 3.2.1 has been updated as per MR template, Version 4.2. requirement same has been checked in the revised MR and found consistent (Closed) 6. In Section 4.1 of MR: The assessment team confirms that table formats are updated as per the guidelines to fill MR template version 4.2. requirement same has been checked in the revised MR and found consistent. (Closed) 7. In Section 4.3 of MR: a. Assessment team confirms that the methods used for generating/measuring, recording, storing, aggregating, collating and reporting the data on monitored parameter is incorporated the same has been checked and verified (Closed) b. Assessment team confirms that Data collection and Data Archiving procedures is incorporated the same has been checked and verified (Closed) c. Assessment team confirms that Emergency procedures is incorporated the same has been checked and verified (Closed) d. Assessment team confirms that QA/QC processes is incorporated the same has been checked and verified (Closed) e. By reviewing revised MR assessment team found that Training processes is incorporated hence accepted. (Closed)				

- f. PP has elaborated about OJWEPL & ORPPL in the revised MR same has been checked and confirmed. **(Closed)**
 - g. Assessment team confirms that location and name of the substation is incorporated same has been checked and found correct **(Closed)**
 - h. Assessment team confirms in revised MR the energy generation to conversion and then distribution to Grid is incorporated hence accepted. **(Closed)**
 - i. By reviewing revised MR, the assessment team found that the Role and responsibility of the monitoring staff is incorporated and training and timely review of performance of personnel also incorporated hence accepted by assessment team **(Closed)**
- 8. In Section 5.2 of MR:** Assessment team confirms that the section is revised with reference of applied methodology by reviewing MR and found correct hence accepted. **(Closed)**
- 9. In Section 5.3 of MR:**
- c. Assessment team confirms that the section is revised with reference of methodology hence accepted. **(Closed)**
 - d. PP has provided appropriate justification which the assessment found correct and hence accepted. **(Closed)**
- 10. In Section 5.4 of MR:**
- c. The assessment team checked the MR and found that section is revised as per the guidelines to fill the MR template, Version 4.2. requirement hence accepted. **(Closed)**
 - d. Methodology reference is added PP assessment team checked and found it working hence accepted **(Closed)**
- In APPENDIX 1 of MR:** The assessment team found that Make model and accuracy class is added same has been checked and found correct hence accepted. **(Closed)**

Hence CAR#02 is Closed by the assessment team.

Description of Forward Action Requests raised by VVB:

Type		Date	~~DD-Month-YYYY~~	
~~FAR~~		Reference	~~Section of Val/Ver protocol~~	
Description of the Non-Conformance				
1stResponse from PP		Date	~~DD-Month-YYYY~~	
1stAssessment by Audit Team	Status	~~Open/Closed~~	Date	~~DD-Month-YYYY~~

APPENDIX C: COMPETENCE STATEMENT

Team Leader



Certification Pvt. Ltd.

VKU.F50W. Competence Statement

COMPETENCE STATEMENT

Name	Barun Kumar
Nationality	Indian
Countries of Experience	India, South Africa, Kenya, Uganda, DR Congo, Zambia
Education Qualification	B.Sc. (Environmental Science & Water Management) M.Sc. (Ecology & Environmental Sciences)
Year of Experience	12 Years +
Area of Expertise	Climate Change & Environment
Eligible Sectoral Scope	TA 1.2 - Renewables TA 3.1 - Energy Demand TA 6.1 - Construction TA 7.1 - Transport

Roles

Project Trainee	NO
Validator/Verifier Trainee	NO
Validator	NO
Verifier	NO
Team Leader	YES
Technical Reviewer	YES
Local Expert (Country Wise)	NO
TA Expert (1.2, 3.1, 6.1, 7.1)	YES
Financial Expert	NO

Reviewed by	Vandana Gupta (Quality Manager)	Date	06/12/2022
Approved by	Vivek Kumar Ahirwar (Technical Manager)	Date	06/12/2022

Validator/Verifier



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	NO
Validator	YES
Verifier	YES
Team Leader	NO
Technical Reviewer	NO
Local Expert	NO
TA Expert (X.X)	NO
Financial Expert	NO

Reviewed by	Vandana Gupta (Quality Manager)	Date	09.05.2023
Approved by	Vivek Kumar Ahirwar (Technical Manager)	Date	09.05.2023

Project Trainee



Certification Pvt. Ltd.

VKU.F50W. Competence Statement

COMPETENCE STATEMENT

Name	Anil Dhankar
Nationality	Indian
Countries of Experience	India
Education Qualification	B.Sc. (BCZ) M.Sc. (Environmental Science)
Year of Experience	NA, Fresher
Area of Expertise	Climate Change & Environment
Eligible Sectoral Scope	NA

Roles

Project Trainee	YES
Validator/Verifier Trainee	NO
Validator	NO
Verifier	NO
Team Leader	NO
Technical Reviewer	NO
Local Expert (Country Wise)	NO
TA Expert (X.X)	NO
Financial Expert	NO

Reviewed by	Vandana Gupta (Quality Manager)	Date	06/12/2022
Approved by	Vivek Kumar Ahirwar (Technical Manager)	Date	06/12/2022

Technical Reviewer



Certification Pvt. Ltd.

VKU.F50W. Competence Statement

COMPETENCE STATEMENT

Name	Sunil Kathuria
Nationality	Indian
Countries of Experience	Malaysia, Uganda, Kenya, South Africa, Nigeria Bangladesh, China, Vietnam, Thailand, Philippines, United Kingdom, Germany, USA
Education Qualification	B.E. (Electrical Power)
Year of Experience	40 Years
Area of Expertise	Climate Change & Environment Energy Generation / Distribution GHG Footprints Manufacturing Sector
Eligible Sectoral Scope	TA 1.1 - Thermal energy generation TA 1.2 - Renewables TA 2.1 - Energy distribution TA 3.1 - Energy Demand (General & Cook Stove) TA 4.1 - Cement and lime production (Manufacturing Industries)

Roles

Project Trainee	NO
Validator/Verifier Trainee	NO
Validator	YES
Verifier	YES
Team Leader	YES
Technical Reviewer	YES
Local Expert (Country Wise)	YES
TA Expert (1.1, 1.2, 2.1, 3.1, 4.1)	YES
Financial Expert	NO

Reviewed by	Vandana Gupta (Quality Manager)	Date	13/05/2023
Approved by	Vivek Kumar Ahirwar (Technical Manager)	Date	13/05/2023