



RENEWABLE ENERGY POWER PROJECTS BY ATRIA POWER



Document Prepared by **VKU Certification Pvt. Ltd.**

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Summary:

VKU Certification Pvt. Ltd. (here after referred as VKU) was commissioned by Kosher Climate India Private Limited and has verified the greenhouse gas emission reduction reported for the project activity “Renewable Energy Power Projects by Atria Power.” (VCS ID 2065¹), covering monitoring period from 01-July-2021 to 31-December-2022 (inclusive of both the dates) under first renewable crediting period from 25-January-2018 to 24-January-2028 (inclusive of both the dates) with regards to the relevant requirements for VCS activities. The project activity entails the installation of wind and solar energy projects in Karnataka, India. The project involves generation of electricity from WTGs and solar panels with installation capacity of 148.8 MW (Wind- 118.8 MW & Solar- 30 MW) which employs wind and solar energy to generate electricity and then distributes the electricity to the Indian National Grid.

This project activity is a greenfield project, meaning that there were no renewable energy-based electricity generation facilities at the site of the project, and the equivalent amount of electricity would have been provided by a grid that was dominated by fossil fuels. This project activity significantly reduces GHG emissions by substituting wind & solar (clean energy) energy for fossil fuels-based electricity.

¹<https://registry.terra.org/app/projectDetail/VCS/2065>

The purpose of the verification is to have an independent review ex-post determination of the monitored reductions in GHG emission reductions. Verification was conducted using VKU's procedures in line with the requirements specified in the VCS program guide version 4.3/4/, VCS standard Version 4.4/5/, VCS validation and verification manual version 3.2/17/. The verification consisted of desk review, on-site assessment and the resolution of outstanding issues and the issuance of the final verification report and certification.

The verification shall ensure that the reported emission reductions are complete and accurate in accordance with applicable VCS/ CDM requirements in order to be certified.

The GHG emission reductions were calculated on the basis of the approved methodology ACM0002 "Grid Connected Renewable Electricity Generation from renewable sources" Version 19.0/7/ and the monitoring plan included in the registered VCS Joint PD & MR/3/ version 02 dated 31-December-2019.

During this verification, 03 Corrective Action Requests (CARs), 05 Clarification Requests (CLs) and 00 Forward Action Request (FAR) were identified related to operation, monitoring and GHG emission reduction calculation of the VCS project activity in relation to all relevant VCS requirements for the project activity and the applied baseline and monitoring methodology, and these CARs and CLs are successfully closed after necessary corrections/clarifications by the client. No FAR was raised during this verification. The same has been discussed in Appendix B of this verification report. The verification team ensured that the reported emission reductions are complete and accurate in accordance with applicable VCS requirements to be certified and being a renewable wind and solar energy project, the uncertainties involved are low as we check 100% of the data, monitoring mechanism and interviews are conducted during verification.

In conclusion, it is VKU's opinion that the project activity "Renewable Energy Power Projects by Atria Power." (VCS ID 2065), meets all relevant requirements for VCS standard and guidelines and correctly applies the baseline and monitoring methodology ACM0002 "Grid Connected Renewable Electricity Generation from renewable sources" Version 19.0/7/. The monitoring system is in place and the emission reductions are calculated without material misstatement.

Hence, VKU is able to certify that the emission reductions from the project during the third monitoring period from 01-July-2021 to 31-December-2022 (inclusive of both the dates) under first renewable crediting period from 25-January-2018 to 24-January-2028 (inclusive of both the dates) amounts to 450,824 tCO₂e.

CONTENTS

1. Introduction	6
1.1 Objective	6
1.2 Scope and Criteria	7
1.3 Level of Assurance.....	8
1.4 Summary Description of the Project	8
2.Verification Process	10
2.1 Method and Criteria.....	10
2.2 Document Review	11
2.3 Interviews	12
2.4 Site Visits	14
2.5 Resolution of Findings	14
2.5.1 Forward Action Requests	15
2.6 Eligibility for Validation Activities	15
3.Validation Findings	15
3.1 Participation under Other GHG Programs	15
3.2 Methodology Deviations.....	16
3.3 Project Description Deviations.....	17
3.4 Grouped Project	17
4.Verification Findings	17
4.1 Project Implementation Status	17
4.2 Safeguards	26
4.2.1 No Net Harm	26
4.2.2 Local Stakeholder Consultation	26
4.3 AFOLU-Specific Safeguards	27
4.4 Accuracy of GHG Emission Reduction and Removal Calculations	27
4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals	28
4.6 Non-Permanence Risk Analysis.....	42
5.Verification Opinion	42
APPENDIX A: <ABBREVIATIONS>	45

APPENDIX B: <AUDIT FINDINGS>	46
APPENDIX C: <COMPETENCE STATEMENT>	56

1 INTRODUCTION

1.1 Objective

Kosher Climate India Private Limited has commissioned VKU Certification Pvt Ltd. (hereafter as VKU) to carry out the third periodic verification of the project “Renewable Energy Power Projects by Atria Power” (VCS ID 2065) for the monitoring period from 01-July-2021 to 31-December-2022 (inclusive of both the dates) under first renewable crediting period from 25-January-2018 to 24-January-2028.

This report summarizes the findings of the verification of the project, performed on the basis of VCS Requirements and UNFCCC criteria for CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting as per VKU’s standard procedure for verification which is in line with VCS standard version 4.4/7/ for verification.

The purpose 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 4.3/4/, VCS standard version 4.4/5/ and GHG program applied, on the basis of the registered project description.

The verification is for the third monitoring period from 01-July-2021 to 31-December-2022 (549 days) (inclusive of both the dates) that falls under the first renewable crediting period² from 25-January-2018 to 24-January-2028.

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

First Crediting Period: 25-January-2018 to 24-January-2028, Including of both dates.		
Periodic Verification No.	Monitoring Period	Number of years
1 st in VCS	25-January-2018 to 30-November-2019 (Inclusive of both the dates)	1 year 10 months 6 days
2 nd in VCS	01-December-2019 to 30-June-2021 (Inclusive of both the dates)	1 year 7 months
3 rd in VCS (Current Monitoring Period)	01-July-2021 to 31-December-2022 (On going) (Inclusive of both the dates)	1 year 6 months

² The first renewable crediting period for the project activity is from 25-January-2018 to 24-January-2028. (As per registered VCS Joint PD & MR version 02 dated 31-December-2019).

The verification will be performed by review of evidences & documents submitted to the VVB by PP, for the registered project activity to establish that:

- The project activity has been implemented and operated as per the registered VCS Joint PD & MR version 02 dated 31-December-2019 /3/ & MR /1/ and that all physical features (technology, project equipment, and monitoring and metering equipment) of the project are in place.
- Monitoring report and other supporting documents are complete.
- The data is recorded and stored as per the monitoring methodology i.e., (“ACM0002 “Grid Connected Renewable Electricity Generation from renewable sources” Version 19.0) /7/ and approved monitoring plan.

To confirm that the monitoring system is implemented and fully functional to generate Verified Carbon Units (VCUs) without any double counting/12/, and to establish that the data reported are accurate, complete, consistent, transparent and free of material error or omission by checking the monitoring records and the emissions reduction calculation.

1.2 Scope and Criteria

The verification scope is:

- to verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan;
- to evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement;
- to verify that reported GHG emission data is sufficiently supported by evidence.

The project is assessed in accordance with the requirements of VCS standard version 4.4/5/, VCS Program Guide 4.3/4/, VCS validation and verification manual version 3.2 /17/, as well as any other applicable rules and guidelines. VKU has used a rule-based approach (as criteria) in the verification, concentrating on the identification of critical reporting rules and the materiality of project monitoring, based on the recommendations in the most recent versions of the VCS Validation and Verification Manual Version 3.2/17/.

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

1.3 Level of Assurance

All the revisions of the verification report before being submitted to the client were subjected to an independent internal technical review to confirm that all verification activities had been completed according to the pertinent VKU's procedure, with a **reasonable level of assurance**.

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

Table No 02: Role/Qualification of Verification team:

Role/Qualification	Last Name	First Name
VCS Team Leader	Kumar	Barun
Technical Expert (TA 1.2, wind & solar)	Kumar	Barun
Validator/Verifier- Trainee	Sharma	Deepali
Project Trainee	Jha	Monika
Technical Reviewer & Technical Expert (TA 1.2, wind & solar)	Kumar	Sanjay

1.4 Summary Description of the Project

The project activity involves electricity generation by wind electric generators and solar panels (renewable source) and supplying the generated electricity to the state grid system which is under the purview of the National Electricity Grid of India. This is a greenfield project activity i. e. there was no renewable energy-based electricity generation facility in the site of this project and equivalent amount of electricity would have been supplied by fossil-fuel dominated grid – which is pre-project scenario as well as baseline scenario for this project activity. The project activity ensures the reduction of greenhouse gas (GHG) emissions that are real, measurable, and verifiable and also plays beneficial role in the mitigation of climate change.

The project activity involves installations of solar panels of 30 MW Capacity and wind turbines of 2.2 MW capacity each at all the three sites aggregating to 118.8 MW in the state of Karnataka. All the solar panels manufactured by JA Solar/ Canadian Solar and WTGs manufactured by M/s Vestas are functioning well since commissioning and this can be further confirmed from documents uploaded on [VERRA](#). **The project was commissioned on 25-January-2018 which is the earliest date of commissioning of the Solar project** and is running satisfactorily since then and these dates are verified against Registered VCS Joint PD & MR/3/ and commissioning certificate/10/.

Table No 03: Wind Power Project Details

Project Participant	Project Type	Project Capacity	Feeder	Date of Commissioning	Project location	State
Atria Wind Power (Basavana Bagewadi) Pvt Ltd	Wind	39.60 MW	Feeder 1	18-April-2018	Vijayapura	Karnataka
			Feeder 2			
Atria Wind Power (Bijapur 1) Pvt Ltd	Wind	39.60 MW	Feeder 3	18-April-2018	Vijayapura	Karnataka
			Feeder 4			
Atria Wind Power (Chitradurga) Pvt Ltd	Wind	39.60 MW	Feeder 5 & 6	27-April-2019	Vijayapura	Karnataka
			Feeder 5 & 6	29-April-2019		

Table No 04: Solar Power Project Details

Project Participant	Project Type	Installed AC Capacity	Installed DC capacity	Date of commissioning	Project location	State
Atria Solar Power (Chamarajnagar) Pvt Ltd	Solar	30 MW	37.5 MWp	25-January-2018	Bellary	Karnataka

Start date of this project activity is 25-January-2018

As per MR/1/, the electricity generated from the project is supplied to the state grid system which is under the purview of the Unified Indian Grid which is confirmed from registered VCS Joint PD & MR, version 02, dated 31-December-2019/3/ B-Forms issued by State electricity Board (KPTCL) /8/ and last verification report/15/ and interview with PP/20/.

This information was verified during on site assessment and found to be in line with the details provided in the registered VCS Joint PD & MR /3/. The total emission reductions achieved in this monitoring period i.e., from of 01-July-2021 to 31-December-2022 (inclusive of both the dates) is **450,824 tCO₂e**. The net electricity generated by the project activity that was evacuated to the

grid during the current monitoring period (third monitoring period) of 01-July-2021 to 31-December-2022 (inclusive of both the dates) is 481,239 MWh.

2 VERIFICATION PROCESS

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 4.3/4/, VCS standard version 4.4/5/. The GHG emission reductions are on the basis of the approved Baseline **and monitoring methodology ACM0002: "Grid Connected Renewable Electricity Generation from renewable sources" Version 19.0/7/**.

Scope: 01 Energy Industries (renewable- and non-renewable sources) Title: "Grid Connected Renewable Electricity Generation" (version 19.0) /7/.

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

- Tool to calculate the emission factor for an electricity system, Version 07.0. /26/

During onsite visit/15/ verification team **reviewed 100% data for all the WTGs and PV Modules** involved in this project **and hence no sampling is involved**.

Monitoring mechanisms used in the project were checked and as mentioned in MR/1/ and VCS Joint PD & MR /3/ meter readings are the only source for measuring energy generation so these readings are crosschecked from the B-Forms /8/ and the accuracy class, details for meter calibration, meter type, make and model of the meters are checked via Calibration certificates /9/ during desk review as well as on-site assessment.

The verification consisted of the following three phases

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

The following sections outline each step in more detail.

2.2 Document Review

The verification was performed primarily based on the review of the monitoring report (MR) version 01 dated 15-January-2023, version 02 dated 13-March-2023, version 03 dated 12-April-2023, version 04 dated 26-April-2023, Version 05 of 05-December-2023 and the emission reduction calculations spreadsheet version 01 of 15-January-2023, version 2 of 13-March-2023 were assessed as part of the verification. In addition, the registered VCS Joint PD & MR/3/ in particular the baseline estimations and the monitoring plan for the project was reviewed. The following table lists the documentation that were reviewed during the verification.

Table No 05: Lists of the documentation that was reviewed during the verification:

/1/	Kosher Climate: VCS monitoring report for “Renewable Energy Power Projects by Atria Power.” Version 01 of 15-January-2023 Version 02 of 13-March-2023 Version 03 of 12-April-2023 Version 04 of 26-April-2023 Version 05 of 05-December-2023
/2/	Kosher Climate: Emission Reduction Calculation Spreadsheet Version 01 of 15-January-2023 Version 02 of 13-March-2023
/3/	Registered VCS Joint PD & MR- “Renewable Energy Power Projects by Atria Power” version 02 dated 31-December-2019
/4/	<u>VCS: VCS Program Guide, version 4.3 of 17-January-2023</u>
/5/	<u>VCS: VCS Standard, version 4.4 of 17-January-2023</u>
/6/	<u>VCS: Monitoring report Template VCS Version 4.2</u>
/7/	<u>CDM Executive Board: Baseline and Monitoring Methodology ACM0002 “Grid Connected Renewable Electricity Generation from renewable sources” Version 19.0</u>
/8/	B Forms issued by state utility KPTCL to PP for the current verification period
/9/	Certificates of Calibration for all the meters belonging to project activity
10/	Commissioning certificate of all the WTGs and solar panels of the project activity issued by state electricity authority
11/	Wheeling and Banking Agreements signed between Project Proponent and Discom
12/	Letter of declaration from PP regarding not having created or sought any other form of environmental credit for the same period
13/	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
14/	<u>Earthood services private limited: Final Verification report “Renewable Energy Power Projects by Atria Power” version 2.0 dated 01- September-2021 covering monitoring period 01-December-2019 to 30-June-2021</u>
15/	Site Visit Photographs and attendance sheet dated 03-March-2023 to 04-March-2023

16/	VERRA: https://registry.verra.org/app/projectDetail/VCS/2065
17/	VCS Validation and verification manual version 3.2 dated 19-October-2016
18/	Technical Specifications of WTGs and solar panels
19/	Grievance Register present on site
20/	On site personnel interview dated 03-March-2023 to 04-March-2023
21/	GPS Google software used for location during onsite visit
22/	Breakdown details for current verification period
23/	REC website Renewable Energy Certificate Registry of INDIA https://www.recregistryindia.nic.in/index.php/publics/faqs
24/	EIA NOTIFICATION dated 14-September-2006; https://moef.gov.in/wp-content/uploads/2018/03/so1533.pdf
25/	LGAI Technological Center S.A- VCS Joint Validation Verification Report version 02 dated 14-March-2020
26/	Tool to calculate the emission factor for an electricity system, Version 07.0
27/	O & M Service Agreement

2.3 Interviews

An on-site inspection has been performed by the assessment team. The representatives of the PP and O&M contractors were interviewed personally by assessment team on **03-March-2023 to 04-March-2023 in Karnataka** i.e., personnel responsible for monitoring of the project activity, data collection and management, and QA/QC procedure. The details of the people interviewed are mentioned in the table below.

Table No 06: Interviews at Wind Power Project site

S No.	Name	Designation/ Organization	Topic
1.	Ravi Kumar	Atria power Dy. Manager	Responsibility for Maintaining the data records, completeness of data, and reliability of data (calibration of equipment's), QA/QC
2.	Ersath Ahmed	Vestas wind tech-O/M Entity	O&M discussion of WTGs, SCADA System, Management Practices
3.	Lakhan K	Zephyrsun- O/M Entity	Site management practices

Table No 07: Interviews at Solar Power Project site

S No.	Name	Designation/ Organization	Topic
1.	Hareesh G.	Site manager	Responsibility for Maintaining the data records, ensures completeness of data, and reliability of data (calibration of equipment's), QA/QC.
2.	Sanna Palaiah	Jr. Engineer	B Forms & Invoicing Procedure, Calibration Mechanism, QA/QC
3.	Umesha T.	Technician	Site management practices

The topics covered during interview ranged from general features and implementation of project to technical details of the project like calibration details, monitoring and measuring system and data collection, recording and archiving procedures. The assessment was drawn based on the feedback received during telephonic interview coupled with the documentation.

Table No 08: Interviews at Wind Power Project site with Local Stakeholders

S No.	Name	Category	Topic of Discussion
1.	Kalyani Kathande	Local Stakeholder	Implementation of Project activity and its impact on the economic, social and environmental parameters around the located project activity and on the local people of the area.
2.	Manjunath	Local Stakeholder	
3.	Ramesh Ukkali	Local Stakeholder	The employment generation due to project activity implementation.
4.	Rajesh Sahab	Local Stakeholder	Salary and other facilities like safety equipment provided on site during

Table No 09: Interviews at Solar Power Project site with Local Stakeholders

S No.	Name	Category	Topic of Discussion
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1.	Hanumantappa	Local Stakeholder	Implementation of Project activity and its impact on the economic, social and environmental parameters around the located project activity and on the local people of the area. The employment generation due to project activity implementation. Salary and other facilities like safety equipment provided on site during
2.	Ningappa	Local Stakeholder	
3.	Umesh T.	Local Stakeholder	
4.	Sunil G.H.	Local Stakeholder	

2.4 Site Visits

An Onsite visit was undertaken by the verification team to the project location identified in the MR at Bellary District on **03-March-2023** and Vijayapura District on **04-March-2023** in Karnataka state India to carry out the following;

- A review of the operation and implementation of the registered project activity in accordance with the VCS Joint PD & MR/3/ and VCS MR/1/approved documents;
- An analysis of the information flows used to generate, aggregating and reporting the monitoring parameters;
- Interviews/20/ with relevant personnel to determine whether the operational and data collection procedures are implemented in accordance with the monitoring plan in the registered VCS Joint PD & MR/3/
- A cross check between information provided in the monitoring report and data from other sources such as plant logbooks, inventories, purchase records or similar data sources;
- A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the PD, the applied methodology including applicable tool(s), and, where applicable, the applied standardized baseline;
- A review of calculations and assumptions made in determining the GHG data and emission reductions;
- An identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.

2.5 Resolution of Findings

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

- If monitoring and reporting reveal non-conformities with the monitoring plan or methodology, or if the evidence offered to demonstrate conformity is insufficient;

- Errors in the application of assumptions, data, or calculations of emission reductions have been made, which will affect the estimate of emission reductions;
- The project's proponent has not addressed issues encountered in a FAR during validation to be assessed during verification.

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

In summary, **05 CLs and 03 CARs** were raised during this verification which were closed successfully and **00 FAR** was raised during this verification. Details are given under Appendix B of this report.

2.5.1 Forward Action Requests

This is third periodical VCS verification of the project activity and no FAR is open from previous VCS verifications. No FAR is open for this verification as well.

2.6 Eligibility for Validation Activities

VKU has not undertaken any validation activities as a part of the verification. Moreover, VKU did not conduct the validation for this project activity. VKU only conducted verification for this project activity. VKU does not hold the accreditation for validation of projects under this or any relevant sectoral scope. Hence this section is not applicable for current verification.

3 VALIDATION FINDINGS

The project is already registered under VCS with reference number 2065. The Joint Validation and Verification was done by LGAI Technological Center, S.A. (Applus+ Certification). The 2nd verification of the project was done by Earthood Services Private Limited. The renewable crediting period is from 25-January-2018 to 24-January-2028 (Inclusive of both the dates). This assessment is for the 3rd monitoring period from 01-July-2022 to 31-December-2022 (Inclusive of both the dates).

3.1 Participation under Other GHG Programs

The project has not applied under any other GHG program except VCS for current monitoring period, 01-July-2021 to 31-December-2022 (inclusive of both the dates). The project is registered under VCS only with project ID 2065³. This was confirmed by checking VERRA registry website and similar exercise was performed for CDM/GS/GCC/UCR registries with similar project

³ <https://registry.verra.org/app/projectDetail/VCS/2065>

title/capacity and Project Proponents but the assessment team was not able to trace any such project registered under any of the above stated registries or under any other similar mechanisms. This was supported from the declaration/27/ submitted by PP in which they claimed that same GHG emission reductions of the project from VCS for the current monitoring period will not be claimed under other registries except VCS. Similar exercise of independently searching for such project registration or claim for current monitoring period was performed for other GHG related benefits such as REC/15/ and I-REC/16/ benefits and based on both independent assessment and declaration submitted by PP/27/, the assessment team accepted the claim that there is no double counting from this project activity for current monitoring period. Thus, ensuring emission reduction generated from the project activity will not be double counted hence accepted by the assessment team.

The details of the registries checked are as follows:

1. <https://www.recregistryindia.nic.in/>
2. <http://cdm.unfccc.int/>
3. <http://www.goldstandard.org/>
4. <https://verra.org/verra-standards-and-programs/>.
5. <https://www.ucarbonregistry.io/>
6. <https://projects.globalcarboncouncil.com/>
7. <https://www.irecstandard.org/registries/>

Rejection by other GHG programs

The Project is not rejected by other GHG programs. A declaration/12/ for the same is checked and found correct by the assessment team. Also, assessment team independently verified with the following registries and checked projects from the PP matching the same project design and found that no such project either exists or were rejected by the registries. The details of the registries checked are as follows:

1. <https://www.recregistryindia.nic.in/>
2. <http://cdm.unfccc.int/>
3. <http://www.goldstandard.org/>
4. <https://verra.org/verra-standards-and-programs/>
5. <https://www.ucarbonregistry.io/>
6. <https://projects.globalcarboncouncil.com/>
7. <https://www.irecstandard.org/registries/>

3.2 Methodology Deviations

During the current monitoring period, no methodology deviation was observed and even during the previous verification /14/ no methodology deviations were observed.

3.3 Project Description Deviations

During the current monitoring period 01-July-2021 to 31-December-2022 (inclusive of both the dates), a Project Description deviation was observed.

Deviation- The following deviation is applied in the monitoring report: -

As verified during the desk review stage PP has mentioned in the section 5.2 of approved VCS-PD, that $EG_{\text{facility},y}$ will be sourced from monthly JMR/B-Forms which can be cross-checked from the invoice raised to DISCOM. During the on-site assessment it was observed that the electricity is not sold to DISCOM but sold to third parties as mentioned in the MR and the invoices raised to third party is based on the net electricity supplied at consumer end after transmission and wheeling charges. So, the net electricity supplied to grid cannot be cross verified from the invoices. Hence the crosschecking reference from invoices is not required. Other methods for cross checking the data like Daily Generation Reports available on-site were cross verified to check the values of $EG_{\text{facility},y}$.

During review of the MR /1/ and other supporting docs like B-Forms/8/, Daily Generation Reports VVB is clearly able to assess that deviation is described and justified appropriately and further the project is in compliance with the VCS rules as per para 3 of section 3.2.9 of VCS Validation and Verification Manual 17/. Hence the deviation is acceptable to the VVB.

As per the document review by VVB – PPA (dated-15-December-2017, 21-April-2018, 27-November-2017, 20-November-2017, etc.) was checked as a part of verification of the project description deviation and it has not been revised since commissioning of the project (terms of PPA is around 25 years⁴). Hence, it can be observed that there is no revision in tariff rate as well as it is fixed for the entire term of the PPA. Further, Sensitivity is not affected by tariff rate as it is fixed at the time of validation only and is applicable for the entire lifetime of the project (25 years). Hence, assessment team confirms that the project description deviation does not impact the additionality of the project.

During the previous verification/15/ no such project description deviations were observed.

3.4 Grouped Project

As per VCS Joint PD & MR version 02 dated 31-December-2019, the project is not a grouped project. This can further be confirmed as per para 3.5.8 of VCS Standard V 4.4. Therefore, this section is not applicable.

⁴ The term for few PPAs is about 10 or 12 years. Considering the condition for extension, it can be done so by intimating about 120 days prior. Since the agreement done between PP and third parties is beginning from year 2017-2018 and considering the 10 years term it is observed that the PPA is applicable till 2027-2028. The current Monitoring period falls from 01-July-2021 to 31-December-2022 (inclusive of both the dates) so there is no revision in the tariff rate. Hence Accepted.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

During the onsite audit with PP representative, it was concluded that the implemented project is as per the requirement of the registered VCS Joint PD & MR /3/ and approved monitoring plan. The total capacity of the project is 148.8 MW (Wind- 118.8 MW_{AC} & Solar- 30 MW_{AC}) in which 54 (2.2 MW*54) WTGS manufactured by M/s. Vestas and 114,658 solar panels manufactured by Canadian Solar and JA Solar (325Wp – 67,385 Nos, 330Wp – 47,273 Nos) has been implemented. During the current monitoring period, it was observed **through breakdown log sheet records/22/** present on site and also provided by PP as soft copy to the VVB where it was verified that the plant underwent breakdown through various reasons like- Main Supply failure, GND Module shunt ground current detected due to Heavy Rain, Liquid refrigerator pump error, Tripped on Cooling liquid pump relay operated, etc at solar plant and due to Transformer installation inspection by Annual external blade cleaning, Deviation in cane edge horizontal measurement inspection work, Prop Valve A Status Fault, Pitch Accumulator Test Failed, etc at wind plant. In the current monitoring period it was observed that, all the WTGs and solar panels are active. The breakdown that occurred was for a **total of 10,236** hours for both the sites which led to the decrease in emission reduction % by 9.93% and was beyond the control of PP/22/. Other than that, the project underwent continuous operation and only scheduled maintenance took place as per the manufacturer's specification/18/ which is acceptable to the assessment team as verified during the interview with PP personnel/20/ Senior engineers/Junior engineer/Assistant manager present at site during onsite visit/15/.

Table No 10: Breakdown Hours for the current Monitoring Period (01-July-2021 to 31-December-2022)

S.No.	Plant Site	Total Hours	Net Operational Hours	Breakdown hours	% Emission reduction decrease
1.	Solar site, Kogali	13,176 hours	12,210 hours/ 89% of total hours	1506 hours 31 minutes/ 11% of total hors	9.93%

2.	Wind Site, Basavanna Bagewadi	740,664 hours ⁵	731,933 Hours 14 minutes/ 98.8% of total hours	8730 hours 46 minutes/1.2% of total hours	
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Project location is confirmed by the assessment team through the GPS Google software during desk review and site visit as well via GPS Map Camera/21/. Moreover, assessment team confirm that the latitudes and longitudes as mentioned in the registered VCS Joint PD & MR/3/ are correct.

Table No 11: The WTG wise latitudes and longitudes are confirmed below:

Project	New Turbine No	Feeder No.	WTG Coordinates	
			Latitude (° N)	Longitude(° E)
Project 1	BBW01	1	16.5970	75.9161
	BBW04	1	16.5998	75.9284
	BBW09	1	16.6040	75.9000
	BBW06	1	16.6055	75.9165
	BBW05	1	16.6095	75.9143
	BBW07	1	16.6151	75.9129
	BBW08	1	16.6144	75.9062
	BBW10	1	16.6226	75.9020
	BBW11	1	16.6128	75.9250
	BBW02	2	16.5887	75.9111
	BBW16	2	16.6456	75.9381
	BBW18	2	16.6464	75.9443
	BBW14	2	16.6373	75.9331
	BBW13	2	16.6347	75.9379
	BBW17	2	16.6433	75.9409

⁵ Total Hours = 13,716 *Number of WTGs (i.e., 54). So, 13,716* 54=740,664

	BBW15	2	16.6403	75.9367
	BBW12	2	16.6318	75.9343
	BBW03	2	16.5998	75.9284
Project 2	BJ24	3	16.6507	75.9174
	BJ31	3	16.6545	75.9445
	BJ35	3	16.6638	75.9481
	BJ36	3	16.6631	75.9523
	BJ32	3	16.6582	75.9483
	BJ33	3	16.6585	75.9432
	BJ22	3	16.6461	75.9259
	BJ34	3	16.6615	75.9433
	BJ23	3	16.6496	75.9264
	BJ26	4	16.6531	75.9344
	BJ29	4	16.6515	75.9573
	BJ27	4	16.6439	75.9496
	BJ25	4	16.6489	75.9349
	BJ30	4	16.6541	75.9521
	BJ20	4	16.6253	75.9463
	BJ21	4	16.6255	75.9535
	BJ28	4	16.6479	75.9506
	BJ19	4	16.6219	75.9555
Project 3	CTA41	5	16.6191	75.9484
	CTA40	5	16.6217	75.9457
	CTA42	5	16.6148	75.9582
	CTA48	5	16.6118	75.9679
	CTA46	5	16.6187	75.9689
	CTA45	5	16.6218	75.9697

CTA47	5	16.6149	75.9712
CTA44	5	16.6250	75.9705
CTA50	5	16.6055	75.9680
CTA38	6	16.6151	75.9449
CTA37	6	16.6164	75.9424
CTA39	6	16.6100	75.9447
CTA43	6	16.6088	75.9581
CTA53	6	16.5974	75.9643
CTA54	6	16.5945	75.9693
CTA49	6	16.6093	75.9711
CTA51	6	16.5990	75.9737
CTA52	6	16.5927	75.9822

Table No 12: The latitudes and longitudes for solar plant is confirmed below:

Project	Solar power plant Coordinates	
	Latitude (° N)	Longitude (° E)
Project 4	14.95	76.14

Starting date of the operation of the project activity is **25-January-2018** which is the date of commissioning/commercial operation of the Solar Plant. Assessment team checked the commissioning certificate and confirmed that the dates of Commission for the Solar plant and WTGs are correct. Assessment team also confirm during the onsite audit/15/ that there is no change in project design and the project is implemented as per the description provided in the registered VCS Joint PD & MR/3/. This has been further verified from the previous verification report /14/.

Table No 13: Commissioning dates for project activity are given below:

Project Promoters (Wind)	Installed Capacity	WTGs	Feeder	Commissioning Date
	39.6 MW	9 x 2.2 MW	Feeder 1	18-April-2018

Atria Wind Power (Basavana Bagewadi) Pvt Ltd		9 x 2.2 MW	Feeder 2	18-April-2018
Atria Wind Power (Bijapur 1) Pvt Ltd	39.6 MW	9 x 2.2 MW	Feeder 3	18-April-2018
		9 x 2.2 MW	Feeder 4	18-April-2018
Atria Wind Power (Chitradurga) Pvt Ltd	39.6 MW	9 x 2.2 MW	Feeder 5 & 6	27-April-2019
		9 x 2.2 MW	Feeder 5 & 6	29-April-2019

Project Promoters (Solar)	Installed AC Capacity	Installed capacity DC	Commissioning Date
Atria Solar Power (Chamarajnagar) Pvt Ltd	30 MW	37.5 MWp	25-January-2018

The technical parameters have been verified with the name plates as well as with the technical specifications/18/ of WTGs and solar panels and also cross checked from the technical manual of the Manufacturer. Assessment team confirms that the technical parameters are consistent with the registered VCS Joint PD & MR /3/ and previous verification report/14/. The major technical specifications of the WTGs and Solar Panels are as follows:

Project 1, 2 & 3: Vestas's wind energy technology by implementing V110 model 2200 kW WTGs.

Table No 14: The technical details of the WTGs are as follows:

Vestas V110-2.2 MW	
Operational Data	
Rated power:	2,200.0 kW
Cut-in wind speed:	3.0 m/s
Cut-out wind speed:	20.0 m/s
Re cut-in wind speed:	18.0 m/s
Wind Class	IEC S
Standard operating Temperature	-20° C to 45° C
Rotor	
Diameter:	120.0 m
Swept area:	11310 m ²
Number of blades:	3
Air brake	Full blade feathering with 3 pitch cylinders
Electrical	
Frequency	50/60 Hz
Voltage generated	690V
Generator type	4-pole (50 Hz)/6-pole (60 Hz) doubly fed generator, slip ring

Voltage supplied (grid)	33kV
Gear box	
Type:	one planetary stage and two helical stages
Tower	
Hub Height	110 m
Nacelle dimension	
Height for transport	4 m
Height installed (incl. Cooler Top®)	5.4 m
Length	10.4 m
Width	3.5 m
Hub Dimension	
Max. transport height	3.6 m
Max. transport width	4 m
Max. transport Length	4.2 m
Blade Dimension	
Length	59 m
Max. chord	3.9 m
Max. weight per unit for transportation	70 tonne

Table No 15: The technical details of the Solar Panels are as follows:

Solar PV Module	
Module Make	Canadian Solar/JA Solar
Module Rating	325 Wp & 330 Wp
Number of modules	325Wp – 67,385 Nos 330Wp – 47,273 Nos
Total Capacity	37,500 kWp
Specification	https://www.canadiansolar.com/upload/2e46a5e4e1c8ba14/9da8c57eb4c725d5.pdf http://www.jasolar.com/uploadfile/2018/0927/20180927023402370.pdf
Inverter	
Inverter Make	Gamesa Electric
Inverter rating	1375 kW & 1250 kW
Number of inverters	1375 kW – 20 Nos 1250 kW – 2 Nos
Total Capacity	30,000 kW
Model	Gamesa E-1.25v1 & E-1.4MVA (1.375 MW) Var_Rev_2
No. of ICR	6
Inverter Transformer	
Rating	450 V/33kV
Capacity	6 MVA & 4.5 MVA

Number of Transformer	6 MVA – 5 Nos 4.5 MVA – 1 No
Total Capacity	34.5 MVA
Power transformer	
Rating	33kV/66 kV
Capacity	31.5 MVA
Number of Transformer	1
Total Capacity	31.5 MVA
Input Voltage (DC)	1000 V
Output Voltage (AC)	33Kv/400 V

The assessment team confirmed through onsite visit/15/ that the monitoring plan was implemented as per the registered VCS Joint PD & MR/3/ and applied methodology ACM0002, Version 19.0/7/. The organizational role and responsibility as mentioned in the registered VCS Joint PD& MR/3/ is followed onsite. Meters are calibrated as per calibration frequency in registered VCS Joint PD& MR/3/.

Assessment team concludes the following:

- There are no material discrepancies between project implementation and the project description provided in the registered VCS Joint PD& MR /3/.
- The monitoring plan is implemented completely and monitoring system (i.e., process and schedule for obtaining, recording, compiling and analysing the monitored data and parameters) is appropriate.
- There are no material discrepancies between the actual monitoring system, and the monitoring plan set out in the project description and the applied methodology/7/.
- 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/12/.
- The project has not received or sought any other form of environmental credit, or has become eligible to do so since validation/25/ or previous verification/14/
- The project is registered under VCS; and, PP has submitted the declaration stating/12/, they are not claiming same GHG emission reductions of the project from any other GHG program for the current monitoring period when project is seeking to get GHG emission reduction from VCS. Audit team also checked the REC mechanism which was verified from the REC website Renewable Energy Certificate Registry of India ([Renewable Energy Certificate Registry of INDIA - Registered RE Generator List \(recregistryindia.nic.in\)](http://recregistryindia.nic.in))/24/
- 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. In which SDG indicator taken by PP are;
 - 7.2 i.e. (Renewable energy share in the total final energy consumption)** Since commissioning, about 1,356,175 MWh renewable electricity has supplied to Indian

National grid till this monitoring that helps to increase the renewable energy share in the energy mix.

Table No 16: Renewable energy share in the total final energy consumption:

S.No.	Monitoring period	Net Generation (MWh)
1.	25-January-2018 to 30-November-2019	375,764
2.	01-December-2019 to 30-June-2021	499,172
3.	01-July-2021 to 31-December-2022 (On going)	481,239
Total	25-January-2018 to 31-December-2022	1,356,175

- **13.0 i.e. (Tonnes of greenhouse gas emissions avoided or removed)** Prevented the release of 1,270,461 tCO₂e into the atmosphere since its commissioning.

Table No 17: Tonnes of greenhouse gas emissions avoided or removed:

S.No.	Monitoring period	Emission Reduction and Removal (tCO ₂ e)
1.	25-January-2018 to 30-November-2019	352,015
2.	01-December-2019 to 30-June-2021	467,623
3.	01-July-2021 to 31-December-2022 (On going)	450,824
Total	25-January-2018 to 31-December-2022	1,270,462

- **8.5 i.e. (Number of employment opportunities created)**- The project has created about 79 employment opportunities since commissioning. Employment records are provided to verify the number of employment opportunities created.

In view of the information's as verified above the assessment team is able to conclude that the project has been implemented as described in the project description, All the above stated information was verified by VVB during onsite visit /15/ and onsite personnel interviews /20/.

4.2 Safeguards

4.2.1 No Net Harm

Being renewable wind and solar power generation project there are no negative impacts on air, water, soil quality and ambience is envisaged due to the implementation of project activity and there are no potential negative environmental and socio-economic impacts in current monitoring period.

As mentioned in MR/1/, PP has conducted an Environmental and social impact assessment study prior to implementation of the project activity. As per the ESIA report, there were no harm identified from the project and hence no mitigations measures are applicable.

VVB has assessed the project activity on site and confirms that there were no negative environmental and socioeconomic impacts observed during current monitoring period as all necessary measures were found in place which was confirmed during site visit /15/.

4.2.2 Local Stakeholder Consultation

The Project is already registered with VCS and registered VCS Joint PD & MR section 2.2 describe the Local Stakeholder Consultation Process as in-line with VCS requirement. Meeting with local stakeholder and continuous grievance is a part of stakeholder engagement. In case of grievances/19/, the nature of probable resolution is discussed with the plant head office and implemented by the site Manager. When conducting physical meeting, a prior information to concerned authorities, meeting notice, formal telephonic calls are made in order to remind and extract maximum engagement. The overall responsibility lies with Site Manager under the supervision from the Head Office team. The responsibilities include invitations, follow ups, organizing meeting, feedbacks, documentation and successful grievance redressal, if any. The contact information is shared with local stakeholders in case they wish to register any grievance/19/and it can be submitted in the following manner: -

For solar site in the suggestion box present at the site.

For wind site in the feedback form present at the site.

During the current monitoring period, there were no additional significant objections or comments made by the stakeholders as part of ongoing feedback as verified onsite from the suggestion box and feedback form present.

The verification team has interacted with local stakeholders during on-site assessment/21/ and details are summarized in section 2.3 of this report. There were no negative comments or feedback from local stakeholders as recorded by the verification team.

4.3 AFOLU-Specific Safeguards

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

4.4 Accuracy of GHG Emission Reduction and Removal Calculations

The project monitoring has been carried in accordance with the registered VCS Joint PD & MR/3/ and the monitoring report/1/. The monitoring plan laid in the registered VCS Joint PD & MR/3/ is being followed at the site/15/ and involves just one parameter to be monitored $EG_{\text{facility},y}$ (Quantity of net electricity generation supplied by the project plant/unit to the grid during this monitoring period) according to the registered monitoring plan mentioned in the monitoring report/1/ and VCS Joint PD & MR /3/. The parameter value is sourced from B-Forms /8/. The import and export value, which is recorded monthly in B-Forms, is properly monitored by installed, calibrated metres of 0.2s accuracy class. The verification team has carefully analysed ER sheet /2/ that was provided by PP by cross-checking the values from the B-Forms that PP submitted and it has determined that all of the equations, conversions, and aggregations are correct. The expected annual emission reduction from the project activity (148.8MW) are 314,814 tCO_{2e}. The estimated emission reduction is 500,535 tCO_{2e} for current monitoring period i.e., 01-July-2021 to 31-December-2022 whereas the actual emission reductions achieved were 450,824 tCO_{2e} which is 9.93 % lower than what was anticipated.

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

In section 4.5 of this report and section 5.4 of MR /1/ calculations have been stated which can be further compiled in ER/2/ that has been verified by the assessment team from B-Forms issued to PP by State utility and further cross verified from the daily generation report available on the site/8/submitted to assessment team by PP. Hence VKU states that the calculation method and formulae used in calculating baseline emission is in compliance to the methodology used/7/. The calculation method and formulae used in calculating baseline emission is in compliance to the methodology used i.e., ACM0002 Version 19.0 /7/. Since project activity is a wind and solar power project, leakage emission and project emission have been considered as zero.

4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

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

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

The only monitoring parameter in the project activity is “Quantity of net electricity supplied to the grid as a result of the implementation of the VCS project activity in year y, $EG_{Facility,y}$ (MWh). This parameter is monitored through controlled reading of meters of each WTG, solar panels and the reading of bulk energy meters installed at substation.

Table No 18: Metering Voltage and Evacuation at Plant Site

S.No.	Plant Site	Metering Voltage at Plant Site	Evacuation at Substation KPTCL
1.	Atria Wind Power (Basavana Bagewadi) Pvt Ltd	33 kV	220 kV
2.	Atria Wind Power (Bijapur 1) Pvt Ltd	33 kV	220 kV
3.	Atria Wind Power (Chitradurga) Pvt Ltd	33 kV	220 kV
4.	Atria Solar Power (Chamarajnagar) Pvt Ltd	66 kv	11 kv ⁶

The below tables describe how the parameter $EG_{Facility,y}$ 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:-

⁶ There is a stepdown of power from the plant end to evacuation at sub-station.

Table No 19: Assessment of Parameter $EG_{\text{facility},y}$ (net electricity supplied by the project (wind/solar) plant/unit to the grid during the monitoring period)

Parameter	Quantity of net electricity supplied by the project (wind/solar) plant/unit to the grid during the monitoring period, $EG_{\text{facility},y}$, (MWh)	
Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	Continuous monitoring, hourly measurement and at least monthly recording for net electricity generation. The net generated electricity supplied to the grid is determined through SEB energy meter installed at delivery points (i.e., the connected sub-station at Basavana Bagewadi and Kogali). Wind: - Net electricity generated and supplied by the project plant/unit to the grid = Export – Import – Transmission loss. Solar: - Net electricity supplied to the grid is estimated as below Net electricity = Export – Import Monthly meter readings are taken from the main and check meter installed at the substation and certified by the representatives of SEB Officials and the representatives of the project proponent.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the registered VCS Joint PD & MR /3/ and monitoring methodology/7/. This was verified by assessment team during desk review and by Team Leader during onsite visit and/15/ interviews with site personnel. /20/.

	Monitoring equipment	Tri-vector Meter Wind: - Project 1- Atria Wind Power (Basavana Bagewadi) Pvt Ltd <table><tr><td>Details</td><td>Feeder-1</td><td>Feeder-2</td></tr><tr><td>Meter Number</td><td>Main:17166962 Check: 17166964</td><td>Main:17166967 Check: 17166977</td></tr></table> Project 2- Atria Wind Power (Bijapur 1) Pvt Ltd <table><tr><td>Details</td><td>Feeder-3</td><td>Feeder-4</td></tr><tr><td>Meter Number</td><td>Main:17166983 Check: 17125600</td><td>Main:17125701 Check: 17167005</td></tr></table> Project 3- Atria Wind Power (Chitradurga) Pvt Ltd <table><tr><td>Details</td><td>Feeder-5</td><td>Feeder-6</td></tr><tr><td>Meter Number</td><td>Main:17167007 Check: 17167012</td><td>Main:17167017 Check: 17167025</td></tr></table> Bulk meter <table><tr><td>Details</td><td></td></tr><tr><td>Meter Number</td><td>Main:17125678</td></tr></table>	Details	Feeder-1	Feeder-2	Meter Number	Main:17166962 Check: 17166964	Main:17166967 Check: 17166977	Details	Feeder-3	Feeder-4	Meter Number	Main:17166983 Check: 17125600	Main:17125701 Check: 17167005	Details	Feeder-5	Feeder-6	Meter Number	Main:17167007 Check: 17167012	Main:17167017 Check: 17167025	Details		Meter Number	Main:17125678
Details	Feeder-1	Feeder-2																						
Meter Number	Main:17166962 Check: 17166964	Main:17166967 Check: 17166977																						
Details	Feeder-3	Feeder-4																						
Meter Number	Main:17166983 Check: 17125600	Main:17125701 Check: 17167005																						
Details	Feeder-5	Feeder-6																						
Meter Number	Main:17167007 Check: 17167012	Main:17167017 Check: 17167025																						
Details																								
Meter Number	Main:17125678																							

		<table><tr><td></td><td>Check: 17125587</td></tr></table> Solar: - Project 4- Atria Solar Power (Chamarajnagar) Pvt Ltd <table><tr><td>Details</td><td>Old Meter (Till Date: 20- October- 2022)</td><td>New Meter (From: 20- October- 2022 onwards)</td></tr><tr><td>Meter Number</td><td>Main: 170028 97 Check: 170692 13</td><td>Main: 220053 07 Check: 220053 11</td></tr></table> Data type: Measured & Calculated Type of meter: Static type meter (Main & Check). Make- L&T Accuracy Class of meter: 0.2s		Check: 17125587	Details	Old Meter (Till Date: 20- October- 2022)	New Meter (From: 20- October- 2022 onwards)	Meter Number	Main: 170028 97 Check: 170692 13	Main: 220053 07 Check: 220053 11
	Check: 17125587									
Details	Old Meter (Till Date: 20- October- 2022)	New Meter (From: 20- October- 2022 onwards)								
Meter Number	Main: 170028 97 Check: 170692 13	Main: 220053 07 Check: 220053 11								
	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	Yes. The accuracy of monitoring equipment is 0.2s valid for the entire range which is as per the registered VCS Joint PD & MR /3/ and it is consistent as per the wheeling and banking agreement/11/. At the time of desk review it was observed that the error percentage during calibration is lower than the accuracy class i.e.- 0.2%. Hence Accepted.								

	manufacturer's specification?	Paramet ers	Main Meter	Check Meter	
		% Error	0.088%	0.089%	
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Yes. The accuracy of monitoring equipment's is valid for the entire range which is per registered VCS Joint PD & MR /3/. This was assessed by checking the calibration certificate of the energy meters /9/. Thus, the assessment team based on the calibration certificates/9/ states that the accuracy is valid for the entire measuring range. The calibration was carried out by Gulbarga Electricity Supply Company Limited and Huballi Electricity Supply Company Limited which is a government agency. The calibration is carried out as per the wheeling and banking agreement norms/11/, moreover it is beyond the control of PP. The government agency itself acts as a third party for the PP. Hence, assessment team accepted the calibration certificates/9/ submitted by the PP issued by Gulbarga Electricity Supply Company Limited and Huballi Electricity Supply Company Limited which mentioned the accuracy is within the entire measuring range.			
	Calibration frequency /interval:	Calibration frequency of the energy meters is once in 5 years as per the registered monitoring plan.			
	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	Yes. The calibration frequency is once in 5 years as outlined in the registered VCS Joint PD & MR /3/ is in accordance with the national standards/14/ i.e Clause 18 of <u>Central Electricity Authority</u>			

	selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	(Installation and Operation of Meters ⁷). This was also confirmed during interview with onsite personnel /20/, which is in line with VCS Standard version 4.4/5/ calibrations requirements as well as per the registered monitoring plan.
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Yes. Calibration of the measuring equipment's is carried out by state utility- Gulbarga Electricity Supply Company Limited and Huballi Electricity Supply Company Limited which is a government agency itself acting as a third party for the PP and it was also verified during onsite personnel interviews/20/.
	Is(are) calibration(s) valid for the whole reporting period?	Yes. Calibration of energy meters/9/ is valid for the current monitoring period for the project activity and it was checked from the calibration certificates provided by the PP.
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes. As per the calibration certificates, error variation observed is lesser than the error variation specified. Hence, it is within the measurable range. The calibration is carried out appropriately as per the registered monitoring plan and VCS standard version 4.4/5/. The calibration is carried out appropriately by Gulbarga Electricity Supply Company Limited and Huballi Electricity Supply Company Limited which is a government agency.
	How were the values in the monitoring report verified?	Cumulative value of $EG_{\text{facility},y}$ for entire monitoring period is reported in the monitoring report/1/, and monthly values in the ER calculation sheet/2/. The monthly values were verified from

⁷ 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

		the B-Forms/8/ issued by state utility and found to be consistent. Value of this parameter for the current monitoring period was verified as 481,239 MWh.
	If applicable, has the reported data been cross-checked with other available data?	The monthly reported values of EG_{facility,y} are recorded in an ER Sheet and were further cross checked with the daily generation report and cross verified from the monthly B-Forms raised by state utility to PP and was found to be consistent.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	On site personnel interview/20/ with the project stakeholder of the project activity confirms that the necessary QA/QC procedures are in place and the data management system is effective and reliable. The desk review of O&M agreement/27/ and register monitoring plan and its implementation in the current monitoring period is done to satisfactorily verify that the system is in place.
	In case project participants 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#03 was raised and resolved.
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan. The emission reduction calculation for the project activity is estimated based on the electricity supplied by the WTGs and Solar Panels. Since 100% data was verified, the team can ascertain that the values taken for emission reduction calculation are free from material errors.

Table No 20: Parameters fixed ex ante:

Parameter	Unit	Description	Value
EFgrid,OM,y	tCO ₂ /MWh	Operating margin CO ₂ emission factor of INDIAN Grid	0.9610 is consistent with the registered VCS Joint PD & MR version 02 dated 31-December-2019/3/ <u>Calculated from CEA database, Version 14, December 2018/20/</u>
EFgrid,BM,y;	tCO ₂ /MWh	Build margin CO ₂ emission factor of INDIAN grid	0.8644 is consistent with the registered VCS Joint PD & MR version 02 dated 31-December-2019/3/ <u>Calculated from CEA database, Version 14, December 2018/20/</u>
EFgrid,CM,y	tCO ₂ /MWh	Combined margin CO ₂ emission factor of INDIAN grid	0.9368 is consistent with the registered VCS Joint PD & MR version 02 dated 31-December-2019/3/ The date has been considered

			in accordance to the “Tool to calculate emission factor of an electricity system”. The Central Electricity Authority (CEA) has provided estimates for the simple operating margin and build margin emission factors for the regional grids. In order to calculate the CO₂ emission factor using the combined margin method for the second crediting period, weights of 0.75 for operating margin and 0.25 for build margin for the Indian grid are considered, as per the 'Tool to calculate the emission factor for an electricity system' (Version 07.0).
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Calibration of meters /9/: During the verification assessment of the project activity, accuracy of all the metering equipment have been checked and found appropriate. The installation and working conditions of the meters were checked during the site inspection and were found to be satisfactory. Details of meters are provided in below table:

Meter and Calibration details for Renewable Energy Power Projects by Atria Power are as follows-

Meter details

Table No 21: Project 1- Atria Wind Power (Basavana Bagewadi) Pvt Ltd

Details	Feeder-1	Feeder-2
Meter Number	Main:17166962 Check: 17166964	Main:17166967 Check: 17166977
Make & Model	L&T Electronic Tri-vector Meter	L&T Electronic Tri-vector Meter
Accuracy	0.2s	0.2s
Location	Pooling station	Pooling station

Table No 22: Project 2- Atria Wind Power (Bijapur 1) Pvt Ltd

Details	Feeder-3	Feeder-4
Meter Number	Main:17166983 Check: 17125600	Main: 17125701 Check: 17167005
Make & Model	L&T Electronic Tri-vector Meter	L&T Electronic Tri-vector Meter
Accuracy	0.2s	0.2s
Location	Pooling station	Pooling station

Table No 23: Project 3- Atria Wind Power (Chitradurga) Pvt Ltd

Details	Feeder-5	Feeder-6
Meter Number	Main:17167007 Check: 17167012	Main: 17167017 Check: 17167025
Make & Model	L&T Electronic Tri-vector Meter	L&T Electronic Tri-vector Meter
Accuracy	0.2s	0.2s
Location	Pooling station	Pooling station

Table No 24: Project 4- Atria Solar Power (Chamarajnagar) Pvt Ltd

Details	Old Meter (Till Date: 20-October-2022)	New Meter (From: 20-October-2022 onwards)
Meter Number	Main: 17002897 Check: 17069213	Main: 22005307 Check: 22005311
Make & Model (Old and New Meter)	L&T Electronic Tri-vector Meter	L&T Electronic Tri-vector Meter
Accuracy	0.2s	0.2s
Location	KPTCL Substation	KPTCL Substation

Table No 25: Bulk meter at KPTCL substation (applicable for Project 1,2 &3):

Details	
Meter Number	Main: 17125678 Check: 17125587
Make & Model	L&T Electronic Trivector Meter
Accuracy	0.2s
Location	KPTCL Substation

Table No 26: Calibration Details

Project	Energy Meter	Calibration date	Calibration due date
Project 1- Atria Wind Power (Basavana Bagewadi) Pvt Ltd	Feeder 1	10-December-2019	09-December-2024
	Main:17166962 Check: 17166964	24-March-2022	23-March-2027
	Feeder 2	10-December-2019	09-December-2024

	Main:17166967 Check: 17166977	24-March-2022	23-March-2027
Project 2- Atria Wind Power (Bijapur 1) Pvt Ltd	Feeder 3 Main:17166983 Check: 17125600	10-December-2019	09-December-2024
		24-March-2022	23-March-2027
	Feeder 4 Main:17135701 Check: 17167005	10-December-2019	09-December-2024
		24-March-2022	23-March-2027
Project 3- Atria Wind Power (Chitradurga) Pvt Ltd	Feeder 5 Main:17167007 Check: 17167012	10-December-2019	09-December-2024
		24-March-2022	23-March-2027
	Feeder 6 Main:17167017 Check: 17167025	10-December-2019	09-December-2024
		24-March-2022	23-March-2027
Project 1-3	Bulk meter Main:17125678 Check: 17125587	10-December-2019	09-December-2024
		24-March-2022	23-March-2027
Project 4- Atria Solar Power (Chamarajnagar) Pvt Ltd (Old Meter details)	Old Meter Main: 17002897 Check: 17069213	12-May-2020	11-May-2025
Project 4- Atria Solar Power (Chamarajnagar) Pvt Ltd (New Meter details)	New Meter Main:22005307 Check: 22005311	20-October-2022	19-October-2027

The energy meter calibration certificates/9/ are checked and found that the calibration details provided in the MR /1/ are correct. From the verification of above table, verification team also

confirms that the energy meter calibrations are valid for the complete monitoring period i.e., from 01-July-2021 to 31-December-2022 (inclusive of both the dates).

The verification team has checked all the meters and confirmed that the meters were working satisfactorily. Also, the calibration of meters is completely under purview of state utility and PP has no control over the same as confirmed through interviews of site personnel and wheeling and banking agreement signed by the PP with state utility/11/.

Hence it can be concluded that the approach followed by the PP is conservative and in line with the guidelines provided under paragraph 3.4.2 of VCS Validation and Verification manual version 3.2./5/

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

The assessment team has verified the monthly B-Forms issued by the state utility KPTCL (Karnataka power transmission corporation 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 assessment team is able to confirm that evidence used to determine the GHG reductions and removals are sufficient and appropriate with respect to quality and quantity.

GHG Calculations:

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

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

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_{grid,CM,y}: Combined margin CO₂emission 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” (tCO₂e/MWh)

Table No 27: Project 1- Atria Wind Power (Basavana Bagewadi) Pvt Ltd

Parameter	Unit	Value
EG PJ, y	MWh	130,232

EF grid,CM,y	tCO ₂ e	0.9368
BEy	=	130,232*0.9368
	=	122,001 (Round down value)

Table No 28: Project 2- Atria Wind Power (Bijapur 1) Pvt Ltd

Parameter	Unit	Value
EG PJ, y	MWh	126,912
EF grid,CM,y	tCO ₂ e	0.9368
BEy	=	126,912*0.9368
	=	118,891 (Round down value)

Table No 29: Project 3- Atria Wind Power (Chitradurga) Pvt Ltd

Parameter	Unit	Value
EG PJ, y	MWh	143,237
EF grid,CM,y	tCO ₂ e	0.9368
BEy	=	143,237*0.9368
	=	134,184 (Round down value)

Table No 30: Project 4- Atria Solar Power (Chamarajnagar) Pvt Ltd

Parameter	Unit	Value
EG PJ, y	MWh	80,858
EF grid,CM,y	tCO ₂ e	0.9368
BEy	=	80,858*0.9368
	=	75,748 (Round down value)

Table No 31: Total calculated value for all the 4 projects:-

Parameter	Unit	Value
EG PJ, y	MWh	481,239

EF grid,CM,y	tCO ₂ e	0.9368
BEy	=	481,239*0.9368
	=	450,824 (Round down value)

The verification team attests to the correctness of the formulas and methodologies used to compute baseline emissions as per Para 42-page no. 33 of the Baseline and Monitoring Methodology ACM0002 “Grid Connected Renewable Electricity Generation from renewable sources” Version 19.0/7/. The applied default values, emission factors, and assumptions in the calculations are all reasonable.

The assumptions, emission factors and default values that were applied in the calculations are justified. The estimated emission reduction for the current monitoring period 01-July-2021 to 31-December-2022 was 500,535 but the actual emissions achieved is 450,824 tCO₂e. The actual emission reduction achieved during this current monitoring period is 9.93% lower than the estimated value. We as VVB accepted this as this is mainly due to the breakdown that occurred due to certain reasons like-

At Solar Site: -

1. Main Supply failure
2. GND Module shunt ground current detected due to Heavy Rain
3. Quarterly Maintenance of KPTCL Grid at Kogali Substation
4. Liquid refrigerator pump error
5. Tripped on Cooling liquid pump relay operated, etc.

At Wind Site: -

1. Transformer installation inspection by
2. Annual external blade cleaning
3. Deviation in cane edge horizontal measurement inspection work
4. Prop Valve A Status Fault
5. Pitch Accumulator Test Failed, etc.

However as mentioned in Breakdown details given by the PP/22/, the breakdown that took place during the current monitoring period was for a total of 1.36% of 754,380 total operational hours for both wind and solar plant.

All the data were made available and 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.

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.

4.6 Non-Permanence Risk Analysis

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

5 VERIFICATION OPINION

VKU Certification Pvt. Ltd. has performed the third verification of the first renewable crediting period (25-January-2018 to 24-January-2028 which is inclusive of both the dates) reported for the project activity “Renewable Energy Power Projects by Atria Power”. VCS Registry Project ID 2065, for the period 01-July-2021 to 31-December-2022 (inclusive of both the dates), with regard to the relevant requirements for VCS activities. As described in the report from section 1 to 4, VKU has performed the entire verification according to the verification criteria for projects and their GHG emission reductions or removals set out in VCS standard Version 4.4/5/. The project participants of the “Renewable Energy Power Projects by Atria Power” are responsible for:

- The preparation of greenhouses gas emissions data and the reported greenhouse gas emission reductions from the project on the basis set out in the monitoring plan contained in the registered VCS Joint PD & MR /3/ version 02 of 31-December-2019.
- The development and maintenance of records and reporting procedures in accordance with that plan, including the calculation and determination of greenhouse gas emission reductions of the project.

It is the responsibility of VKU to express an independent verification opinion about the project’s conformity with the requirements of VCS Standard version 4.4/5/ and GHG program applied, on the reported greenhouse gas emission reductions from the project.

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

- The project has been implemented and operated as per the registered VCS Joint PD & MR /3/.
- The monitoring report and other supporting documents provided are complete and verifiable and in accordance with the applicable VCS Standard version 4.4/5/ requirements;
- The monitoring is in place as per the applied baseline and monitoring methodology
- The monitoring plan in the registered VCS Joint PD & MR /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.

It is VKU's opinion that the GHG emission reduction stated in the monitoring report version 05 of 05-December-2023 for the "Renewable Energy Power Projects by Atria Power" for the period 01-July-2021 to 31-December-2022 (inclusive of both the dates) are fairly stated. The GHG emission reductions are calculated on the basis of approved methodology ACM0002 version 19.0/7/ and the monitoring plan included in the registered VCS Joint PD & MR version 02 of 31-December-2019/3/.

- Hence VKU is able to certify that the emission reduction from the project during the current monitoring period from 01-July-2021 to 31-December-2022 (inclusive of both the dates) amounts to 450,824 tCO₂e.
- The following table shows the Net Emission Reduction from 01-July-2021 to 31-December-2022 (inclusive of both the dates) of first renewable crediting period.
- Verified GHG emission reductions and removals in the above verification period:

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)
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Year 2021*	150,635	0	0	150,635
Year 2022	300,189	0	0	300,189
Total	450,824	0	0	450,824

* For the period from 01-July-2021 to 31-December-2022

APPENDIX A: <ABBREVIATIONS>

Abbreviations	Full texts
BE	Baseline Emissions
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER(s)	Certified Emission Reduction(s)
CL	Clarification Request
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
DISCOM	Distribution Company
EB	Executive Board
EF	Emission Factor
ER	Emission Reductions
FAR	Forward Action Request
GHG(s)	Greenhouse gas(es)
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
KPTCL	Karnataka Power Transmission Corporation Limited
MoV	Means of Verification
MR	Monitoring Report
NGO	Non-governmental Organization
ODA	Official Development Assistance
PD	Project Description
PE	Project Emission
PP(s)	Project Participant(s)
Ref.	Document Reference
SS(s)	Sectoral Scope(s)
TA(s)	Technical Area(s)
UNFCCC	United Nations Framework Convention on Climate Change
VCU	Verified Carbon Unit
VKU	VKU Certification Ltd.
VCS	Verified Carbon Standard
VVS	Validation and Verification Standard
VVB	Validation and verification body

APPENDIX B: <AUDIT FINDINGS>

Type	Date	07-March-2023
CL#01	Reference	Section of Ver protocol- 1.1, 1.11, 2.2 of MR
Description of the Non-Conformance		
Section 1.1 of MR- PP is requested to write the full form for KPTCL and DISCOM. Also, request to mention the name of the specific DISCOM. Section 1.11 of MR- PP is requested to provide employment records to verify the same. Section 1.1 of MR- PP is requested to clarify whether they are selling the electricity to the third party or to National Grid. Section 2.2 of MR- PP is requested to share the ESIA Report to substantiate the claim in the MR. Section 2.2 of MR- PP is requested to provide the grievance register present at site for recording stakeholders' comments.		
1 st Response from PP	Date	13-March-2023
Section 1.1 of MR – Full form of KPTCL and specified DISCOM are added in the MR and also mentioned the name of the specific DISCOM. Section 1.11 of MR- Employment records are submitted. Section 1.1 of MR – The electricity is sold to a third party. Section 2.2 of MR- The ESIA Report was already submitted at the time of Validation of the Project Activity. The stakeholder consultation report is submitted. Section 2.2 of MR- Photos of the grievance register present at the site for recording stakeholders' comments are submitted.		
1 st Assessment by Audit Team	Status	Open
Date	12-April-2023	
Section 1.1 of MR- During assessment it was verified that PP written the full form for KPTCL and has also, mentioned the name of the specific DISCOM along with full form. Hence Accepted. #Closed Section 1.11 of MR- During assessment it was verified that PP has not provided employment records to verify the employment opportunities created. #Open Section 1.1 of MR- During assessment it was verified that PP has clarified that they are selling electricity to the third party and reference of sale to the board/DISCOM are removed now. Hence Accepted. #Closed. Section 2.2 of MR- During Assessment it was verified from the Joint VCS Validation & Verification Report by Applus+ Certification dated- 14/03/2020 that PP has provided the ESIA report during validation of project activity. Hence Accepted. #Closed. Section 2.2 of MR- During assessment it was verified that PP has provided photos for the meeting and grievance register of stakeholder's consultation held during Validation and also for the current monitoring period. Hence Accepted. #Closed. Section 1.1 of MR- PP is requested to provide wheeling and banking agreement for all the Project activities. #Open		
CL#01 OPEN		

2nd Response from PP		Date	12-April-2023
Section 1.11 of MR: Employment records to verify the employment opportunities created is provided. Section 1.1 of MR: Wheeling and banking agreement for all the Project activities is provided.			
2nd Assessment by Audit Team	Status	Closed	Date
Section 1.11 of MR: During the assessment it was verified that PP has now submitted employment records to the VVB. Hence Accepted. #Closed. Section 1.1 of MR: During the assessment it was verified that PP has now provided wheeling and banking agreement for all the project activities. Hence Accepted. #Closed.			
CL#01 CLOSED			

Type	Date	07-March-2023
CL#02	Reference	Section of Ver protocol- 3.1, 4.2, 4.3 of MR
Description of the Non-Conformance		
Section 3.1 of MR- PP is requested to mention the technology details of the WTGs & Solar Plants, also provide supporting documents to verify the same. Section 4.2 of MR- PP is requested to provide the make and model of all the meters. Section 4.2 of MR- PP is requested to provide the calibration certificates for Feeder no- 2, 5, & 6. Section 4.3 of MR- PP is requested to mention the name of O & M entity for both the wind and solar sites and also provide O & M agreements. Section 4.3 of MR- PP is requested to provide the breakdown details separately for both wind and solar projects. Section 4.3 of MR- PP is requested to provide the invoices again as the ones already provided are not accessible. Section 4.3 of MR- PP is requested to provide the training records to verify the same.		
1stResponse from PP	Date	13-March-2023
Section 3.1 of MR- The technology details of the WTGs & Solar Plants are added in the MR, and also provided the technical specifications of the same. Section 4.2 of MR – The make and model of all meters are added to the MR. Section 4.2 of MR – Calibration certificate for feeder numbers 2,5 &6 are provided. The new calibration dates for all the feeder meters are updated in the MR and provided the calibration certificates. Section 4.3 of MR- The O & M entity for both the wind and solar sites are provided in the updated MR and O & M agreement documents for both the sites are provided. Section 4.3 of MR- The breakdown details are provided separately for both wind and solar projects. Section 4.3 of MR – All the invoices are uploaded again in a new folder and are accessible.		

7. Section 4.3 of MR- The training records are submitted.					
1 st Assessment Team	by Audit	Status	Open	Date	12-April-2023
1. Section 3.1 of MR- During assessment it was verified that PP has added the technology details for both wind and solar plant and evidence is also provided to verify the same. Hence Accepted. #Closed. 2. Section 4.2 of MR- During assessment it was verified that PP has now added the make and model of all the meters. Hence Accepted. #Closed 3. Section 4.2 of MR- During assessment it was verified that PP has provided all the calibration certificates now. Hence Accepted. #Closed 4. Section 4.3 of MR- During assessment it was verified that PP has mentioned names for all the O & M Entities and has also shared O & M agreements. Hence Accepted. #Closed 5. Section 4.3 of MR- During assessment it was verified that PP has provided breakdown details for both wind and solar sites separately in an Excel sheet. But PP is requested to reference the submission of the same in MR as well along with mentioning the Month wise and cumulative major breakdown details and total operational hours for the project activity in the MR #Open. 6. Section 4.3 of MR- During assessment it was verified that PP has shared invoices from Jan 2022-Dec 2022, but invoices from July 2021 - Dec 2021 have not been shared. Hence PP is requested to share the same as well. #Open 7. Section 4.3 of MR- During assessment it was verified that PP has not provided the training records to verify the personnel trainings conducted. #Open.					
CL#02 OPEN					
2 nd Response from PP				Date	12-April-2023
1. Section 4.3 of MR- Major breakdown details are provided in the MR now. Rest all the breakdown were minor breakdown. 2. Section 4.3 of MR- Invoices from July 2021 – Dec 2021 are provided now. 3. Section 4.3 of MR- Training records of personal training conducted are provided.					
2 nd Assessment Team	by Audit	Status	Closed	Date	13-April-2023
1. Section 4.3 of MR- During the assessment it was verified that PP has provided the details about major breakdown in the MR and other details are provided separately in the excel sheet. Hence Accepted. #Closed. 2. Section 4.3 of MR- During assessment it was verified that PP has taken project description deviation that the electricity is not sold to DISCOM but sold to third parties and the invoices raised to third party will be based on the net electricity supplied at consumer end after transmission and wheeling charges. So, the net electricity supplied to grid cannot be cross verified from the invoices. Hence Invoices are not required for cross verifying the values. Hence Accepted. #Closed. 3. Section 4.3 of MR- During assessment it was verified that PP has now provided the training records to verify the personnel trainings conducted. Hence Accepted. #Closed.					
CL#02 CLOSED					

Type	Date	07-March-2023
CL#03	Reference	Section of Ver protocol-MR & ER Sheet
Description of the Non-Conformance		
ER Sheet		
1. As confirmed during OSV, PP is requested to share the meter change details for the month of October 2022. PP to add/update the details about same in ER Sheet.		
1 st Response from PP	Date	13-March-2023
1. The meter change details for the month of October 2022 are updated in the MR and also updated the details in ER sheet.		
1 st Assessment by Audit Team	Status	Closed
Date	12-April-2023	
1. During assessment it was verified that PP has provided the meter change details separately to the VVB and the same is mentioned in MR & ER Sheet as well. Hence Accepted. #Closed.		
CL#03 CLOSED		

Type	Date	24-April-2023
CL#04	Reference	Section of Ver protocol-1.1, 1.7, 2.2, 4.2, 3.1 of MR
Description of the Non-Conformance		
1. Section 1.1 of MR -PP is requested to state the duration in months for ease of recognising under this column and add whether all the dates are inclusive of both first and last dates. #OPEN 2. Section 1.7 of MR - PP is requested to clarify whether the feeders given in the table of geographical coordinates under this section denote the number of feeders or feeder number? #OPEN 3. Section 2.2 of MR - PP is requested to mention the dates of local stakeholder consultation conducted during ESIA assessment study. #OPEN 4. Section 4.2 of MR - PP is requested to clarify which method is adopted for net electricity supplied to the grid, since the project is already in operation. #OPEN 5. Section 4.2 of MR - PP is requested to clarify whether it is wind or solar in the section. 6. Section 3.1 of MR - PP is requested to mention no of Inverter Control Rooms (ICRs) present. What is the input voltage (DC) and output voltage (AC) connected to the transformer yard or switch yard of the project activity? Does the switch yard use arc insulation to prevent accidental sparks at inadvertent high voltages? #OPEN		

1 st Response from PP			Date	26-April-2023	
1. Section 1.1 of MR- Monitoring period is now mentioned in year and months. Yes, all the dates are inclusive of both the dates 2. Section 1.7 of MR- The feeders given in the table of geographical coordinates under this section denotes the feeder number the WTG is connected to. 3. Section 2.2 of MR- Now the dates are quoted in the MR. 4. Section 4.2 of MR- The method adopted is the Net electricity = Export - Import - Transmission losses. 5. Section 4.2 of MR- It is solar project; it is corrected now in the MR. 6. Section 3.1 of MR- There are 6 ICR present. Input voltage (DC) is 1000V and output voltage (AC) is 33kV/400V is connected to the transformer yard. Yes, the switch yard use arc insulation to prevent accidental sparks at inadvertent high voltages.					
1 st Assessment by Audit Team		Status	Closed	Date	26-April-2023
1. Section 1.1 of MR- During the assessment it was verified that PP has mentioned the Monitoring period in year and months now and has also added that all the dates are inclusive of both the dates. Hence Accepted. #Closed. 2. Section 1.7 of MR- During the assessment it was verified that the feeders given in the table of geographical coordinates under this section denotes the feeder number the WTG is connected to. Hence Accepted. #Closed. 3. Section 2.2 of MR- During the assessment it was verified that PP has now quoted the dates in the MR. Hence Accepted. #Closed. 4. Section 4.2 of MR- During the assessment it was verified that PP has updated the method adopted- Net electricity = Export - Import - Transmission losses. Hence Accepted. #Closed. 5. Section 4.2 of MR- During the assessment it was verified that PP has now updated in the MR that it is a Solar Project. Hence Accepted. #Closed. 6. Section 3.1 of MR- During the assessment it was verified that PP has now mentioned no of Inverter Control Rooms (ICRs) present, input voltage (DC) and output voltage (AC) connected to the transformer yard or switch yard of the project activity and switch yard uses arc insulation to prevent accidental sparks at inadvertent high voltages. Hence Accepted. #Closed.					
CL#04 CLOSED					

Type	Date	24-April-2023
CL#05	Reference	Section of Ver protocol- 3.1, 4.2, 4.3, 5.2 of MR
Description of the Non-Conformance		
Section 3.1 of MR- PP is requested to provide the voltage generated at the WTG end and voltage when the power is supplied to grid via the switchyard at the WTG. #OPEN Section 4.2 of MR- PP is requested to clarify are the feeders dedicated feeders exclusive to the project activity or not. #OPEN Section 4.2 of MR- PP is requested to kindly clarify the year for new meter installation. #OPEN Section 4.3 of MR- PP is requested to describe what they consider as major breakdown as per their internal quality records. #OPEN		

5. Section 4.3 of MR- PP is requested to clarify whether meter readings are the only data source for measuring energy generation? If yes, how is the data uncertainty minimised? Also, in the event of both the meters failing, what is the mechanism involved to measure the energy generation? #OPEN					
6. Section 5.2 of MR- PP is requested to mention How are the solar panels cleaned? What is the energy source involved towards cleaning of the panels? #OPEN					
7. Section 4.3 of MR- PP is requested to add the total of the major breakdown details mentioned for the WTGs. #OPEN					
1 st Response from PP				Date	26-April-2023
1. Section 3.1 of MR- Voltage generated at WTG end is 690V and voltage when the power is supplied to grid via the switchyard at the WTG is 33kV.					
2. Section 4.2 of MR- All the feeder meter are dedicated feeders exclusive to the project activity.					
3. Section 4.2 of MR- The new meter was installed on 20-October-2022, now corrected in the MR.					
4. Section 4.3 of MR- The breakdown sheet for solar site is submitted and it doesn't have any major breakdown as all the breakdown are minor (less than 12 hr) and it's not considered.					
5. Section 4.3 of MR- Yes, the meter readings are the only source for measuring energy generation. The main and check meters are tested for accuracy every calendar quarter with reference to a portable standard meter owned by the BESCOM which shall be of an accuracy class of 0.1. In the event of both the main meter and check meter fails both meters will be calibrated immediately and corrections applied to the reading registered by the main meter to arrive at the correct reading of energy supplied for billing purpose for the period from last month's meter reading up to the current test. Billing for the period thereafter till the next monthly meter reading shall be as per the calibrated meter.					
6. Section 5.2 of MR- Solar panels are cleaned by the water pipe system arranged. Energy source for pumping water is auxiliary energy is already accounted in the ERs.					
7. Section 4.3 of MR- The total is added now in the MR					
1 st Assessment Team	by	Audit	Status	Closed	Date
					26-April-2023
1. Section 3.1 of MR- During the assessment it was verified that PP has provided the voltage generated at the WTG end and voltage when the power is supplied to grid via the switchyard at the WTG. Hence Accepted. #Closed.					
2. Section 4.2 of MR- During the assessment it was verified that PP has clarified that the feeders are dedicated feeders exclusive to the project activity. Hence Accepted. #Closed.					
3. Section 4.2 of MR- During the assessment it was verified that PP has clarified that new meter was installed on 20-October-2022. Hence Accepted. #Closed.					
4. Section 4.3 of MR- During the assessment it was verified that PP has described what they consider as major breakdown as per their internal quality records. Hence Accepted. #Closed.					
5. Section 4.3 of MR- During the assessment it was verified that PP clarified that meter readings are the only data source for measuring energy generation and how is the data uncertainty minimised. And have also mentioned, in the event of both the meters failing, what is the mechanism involved to measure the energy generation. Hence Accepted. #Closed.					

6. **Section 5.2 of MR-** During the assessment it was verified that PP has mentioned that Solar panels are cleaned by the water pipe system arranged and energy source involved in the process is also mentioned. Hence Accepted. #Closed.
7. **Section 4.3 of MR-** During the assessment it was verified that the total for the breakdown details is now added in the MR. Hence Accepted. #Closed.

CL#05 CLOSED

Type	Date	07-March-2023
CAR#01	Reference	Section of Ver protocol- contents, 1.1, 1.3, 2.2, 2.3 of MR
Description of the Non-Conformance		
1. Contents table of MR- PP is requested to update the contents table as per the MR. 2. Section 1.1 of MR- PP is requested to mention the details about current monitoring period as well. 3. Section 1.3 of MR- PP is requested to delete the instructions as mentioned in VCS Monitoring Report Template version 4.2 4. Section 2.2 of MR- PP is requested to keep the format of dates constant throughout the MR. 5. Section 2.3 of MR- PP is requested to explain why the section is not applicable as per the VCS Monitoring Report Template Version 4.2.		
1 st Response from PP	Date	13-March-2023
1. Contents table of MR – The font size and font style of the contents table are corrected as per the VCS Monitoring report template version- 4.2 2. Section 1.1 of MR – Current monitoring details are added to the table 3. Section 1.3 of MR – The instructions are deleted as mentioned in the VCS Monitoring report Template version 4.2 4. Section 2.2 of MR – The format of dates is corrected and the format of dates are kept constant throughout the MR. 5. Section 2.3 of MR -The project activity is the construction and generation of electricity from greenfield solar and wind plants. This does not fall under AFOLU projects; hence this section is not applicable to this project activity.		
1 st Assessment by Audit Team	Status	Open
Date	12-April-2023	
1. Contents table of MR- During assessment it was verified that PP has updated content table as per the MR template. Hence Accepted. #Closed. 2. Section 1.1 of MR- During assessment it was verified that PP has now added Details regarding the current monitoring period. Hence Accepted. #Closed. 3. Section 1.3 of MR- During assessment it was verified that PP has deleted the instructions as mentioned in VCS Monitoring Report Template version 4.2. Hence Accepted. #Closed.		

4. **Section 2.2 of MR-** During assessment it was verified that PP has now kept the format of dates constant throughout the MR. Hence Accepted. #Closed.

5. **Section 2.3 of MR-** PP is requested to update the reason for the section being not applicable under the required section 2.3 as well as per the VCS MR Template version 4.2. #Open.

CAR#01 OPEN

2 nd Response from PP	Date	12-April-2023
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1. **Section 2.3 of MR-** The reason for the section 2.3 not being applicable is updated now as per the VCS MR Template version 4.2.

2 nd Assessment by Audit Team	Status	Closed	Date	13-April-2023
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1. **Section 2.3 of MR-** During the assessment it was verified that PP has now updated section 2.3 as mentioned in VCS Monitoring report template Version- 4.2. Hence Accepted. #Closed.

CAR#01 CLOSED

Type	Date	07-March-2023
CAR#02	Reference	Section of Ver protocol-4.3, 5.4 of MR.
Description of the Non-Conformance		
1. Section 4.3 of MR- PP is requested to remove the usage of futuristic sentences throughout the MR. 2. Section 5.4 of MR- PP is requested to update the monitoring period dates. 3. Section 5.4 of MR- PP is requested to update the MP days including first and last days. 4. Editorial corrections throughout the MR- PP is requested to update the font size, font style, font colour, italics font as mentioned in VCS Monitoring report template Version- 4.2		
1 st Response from PP	Date	13-March-2023
1. Section 4.3 of MR – The usage of futuristic statements is removed throughout the MR. 2. Section 5.4 of MR – Monitoring period dates are corrected in the MR. 3. Section 5.4 of MR – The monitoring period days are corrected and it includes the first and last days. 4. Editorial corrections throughout the MR – Necessary corrections are done as per the VCS Monitoring report template version- 4.2		
1 st Assessment by Audit Team	Status	Open
Date	12-April-2023	
1. Section 4.3 of MR- During assessment it was verified that PP has removed Futuristic sentences throughout the MR. Hence Accepted. #Closed. 2. Section 5.4 of MR- During assessment it was verified that PP has now updated the monitoring period. Hence Accepted. #Closed.		

3. Section 5.4 of MR- During assessment it was verified that PP has updated the Monitoring Periods days including the first and last days. Hence Accepted. #Closed. 4. Editorial corrections throughout the MR- During assessment it was verified that PP has made the editorial corrections including font size, font style, font colour, italics font as mentioned in VCS Monitoring report template Version- 4.2 in most of the sections, but font style on title page and audit history table has not been updated to Franklin gothic book yet. #Open.				
CAR#02 OPEN				
2 nd Response from PP			Date	12-April-2023
4.Editorial corrections throughout the MR- The font style on the title page and audit history table is updated to Franklin gothic book now.				
2 nd Assessment by Audit Team	Status	Closed	Date	13-April-2023
1. Editorial corrections throughout the MR- During the assessment it was verified that PP has now updated the font style on the title page and audit history table is to Franklin gothic book. Hence Accepted. #Closed.				
CAR#02 CLOSED				

Type	Date	24-April-2023
CAR#03	Reference	Section of Ver protocol- 1.11, 3.1, 4.3 of MR
Description of the Non-Conformance		
1. Section 1.11 of MR- As per the template guidance, PP is requested to provide the calculation involved in summing up the impacts from previous monitoring reports. Applicable for the entire column. #OPEN 2. Section 3.1 of MR- PP is requested to provide information on events that may impact the GHG ERs or removals and monitoring as per the template. #OPEN 3. Section 4.3 of MR- PP is requested to update the abbreviation from VERs to VCU. #OPEN 4. Section 1.11 of MR- PP is requested to provide evidences for SD contributions as appendices to the report as per the MR template. #OPEN		
1stResponse from PP	Date	26-April-2023
1. Section 1.11 of MR- Calculations involved in summing up the impact from previous monitoring reports is now provided in the MR. 2. Section 3.1 of MR- There were few major breakdowns in the wind project listed in the section 4.3, apart from this there were no events impacting the GHG ERs. 3. Section 4.3 of MR- Necessary corrections are done now in the MR. 4. Section 1.11 of MR- Appendix for the SD contributions are provided now. (Attendance sheet)		

1 st Assessment by Audit Team	Status	Closed	Date	26-April-2023
Section 1.11 of MR- During the assessment it was verified that as per the template guidance, PP has provided the calculation involved in summing up the impacts from previous monitoring reports. Applicable for the entire column. Hence Accepted. #Closed. Section 3.1 of MR- During the assessment it was verified that PP has provided information on events that may impact the GHG ERs or removals and monitoring as per the template. Hence Accepted. #Closed. Section 4.3 of MR- During the assessment it was verified that PP has updated the abbreviation from VERs to VCUUs. Hence Accepted. #Closed. Section 1.11 of MR- During the assessment it was verified that PP has provided evidences for SD contributions as appendices to the report as per the MR template. Hence Accepted. #Closed.				
CAR#03 CLOSED				

APPENDIX C: <COMPETENCE STATEMENT >

Team Leader

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- Trainee

COMPETENCE STATEMENT

Name	Deepali Sharma
Nationality	Indian
Countries of Experience	India
Education Qualification	B.Sc. (Environmental Science) M.Sc. (Environmental Science)
Year of Experience	2 years as Intern and 6 months as Employee
Area of Expertise	Climate Change & Environment
Eligible Sectoral Scope	NA

Roles

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

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

Project Trainee

COMPETENCE STATEMENT

Name	Monika Jha
Nationality	Indian
Countries of Experience	India
Education Qualification	M.Sc. (Environmental Science) B.Sc. (Medical Science) PG Diploma (Environmental Science and sustainable development)
Year of Experience	1.9 years in <i>UA Consultants as Environmental Consultant.</i>
Area of Expertise	NA
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

COMPETENCE STATEMENT

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

Roles

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

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